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NFHS Policy Tracker for Districts

User Guide and Technical Notes

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Introduction

Using the district factsheets from the National Family Health Surveys (NFHS-4 and NFHS-5), we present an interactive dashboard to visualize Health, Nutrition, and Population indicators across India.

The dashboard allows users to visualize the direct estimates on Health, Nutrition and Population indicators from NFHS-5 (2019-21). It can also be used to track changes between NFHS-4 (2015-16) and NFHS-5. The dashboard can further filter the estimates by:

- Aspirational Districts
- Multiple Percentiles
- States/Districts

Tracking these indicators at the district level can inform the design of policies and enable the prioritisation of districts for intervention. Further, a district-level assessment of the NFHS-5 factsheets could also inform setting agendas for the future.

This dashboard was created in collaboration with National Institution for Transforming India (NITI) Aayog and the International Institute for Population Sciences (IIPS).

Data Sources

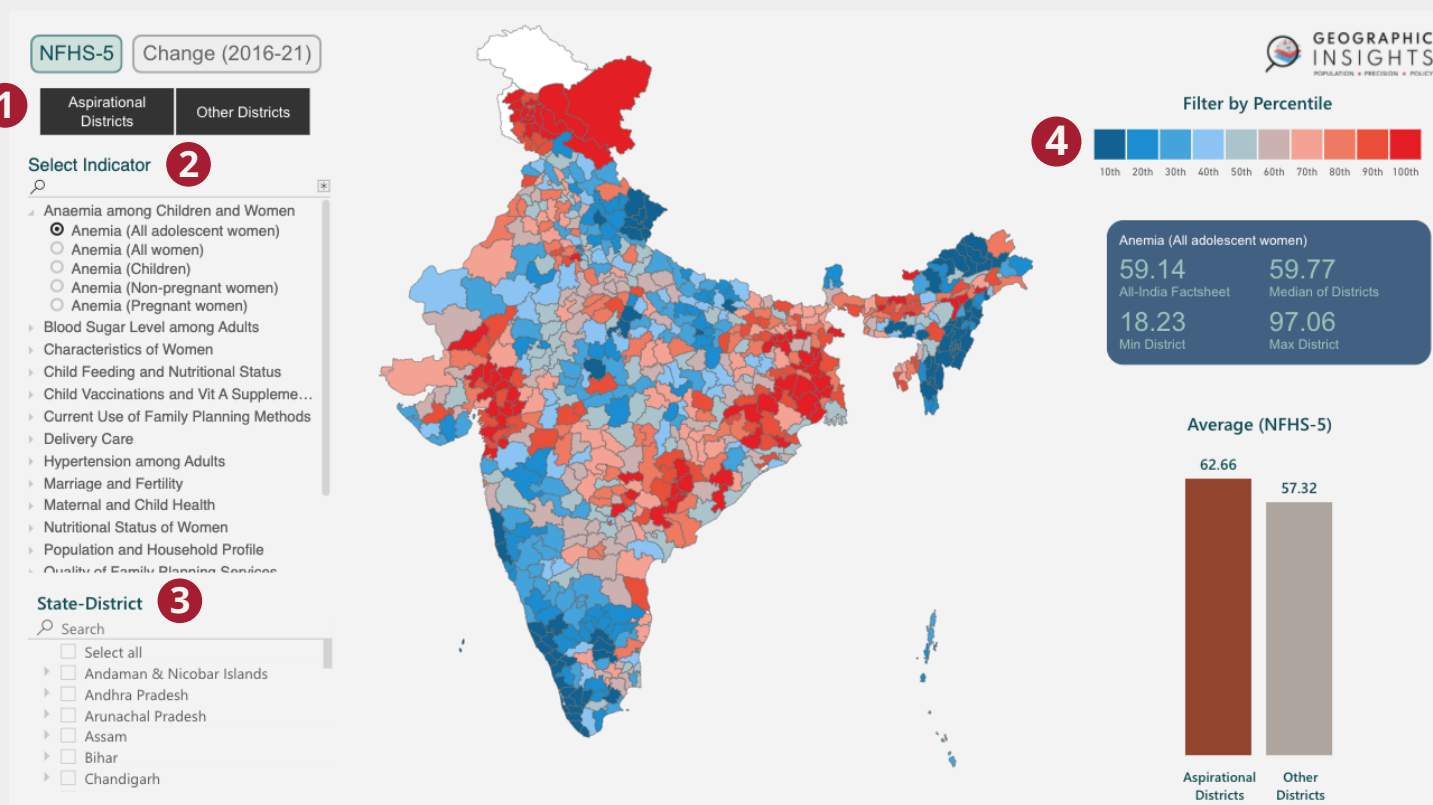
The data source for NFHS-4 district factsheet data was the Hindustan Times Lab's GitHub: <https://github.com/HindustanTimesLabs/nfhs-data>.

The data source for the NFHS-5 district factsheet data was IIPS's district and state factsheet compendiums: http://rchiips.org/nfhs/Factsheet_Compndium_NFHS-5.shtml.

The district shapefile was taken from IIPS, and the 112 aspirational district list was given to us by NITI Aayog.

User Guide to NFHS-5

This is the landing page of NFHS-5 on the dashboard.



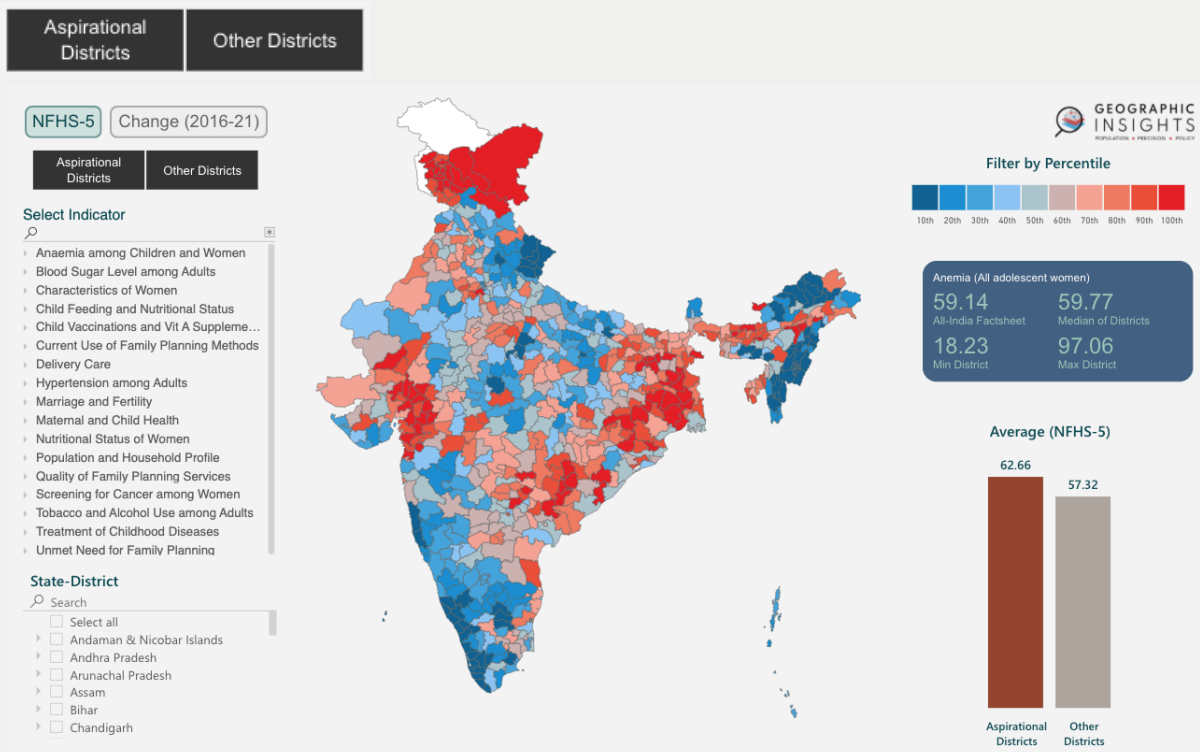
This User Guide describes all the features of the dashboard, which are highlighted with the numbers shown above.

1 Toggle between Aspirational Districts/Other Districts

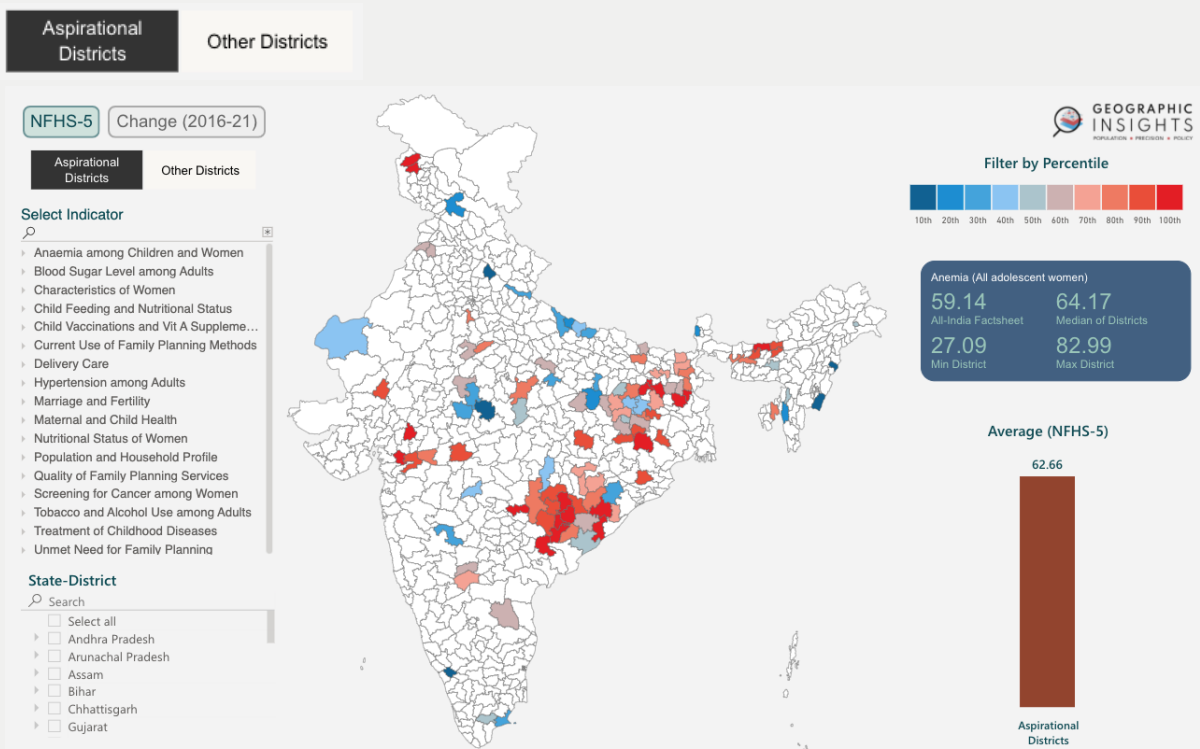
This feature of the dashboard allows the user to toggle between the NFHS-5 visualization on the map for Aspirational Districts and Other Districts.

The toggle button has 3 possible selection cases:

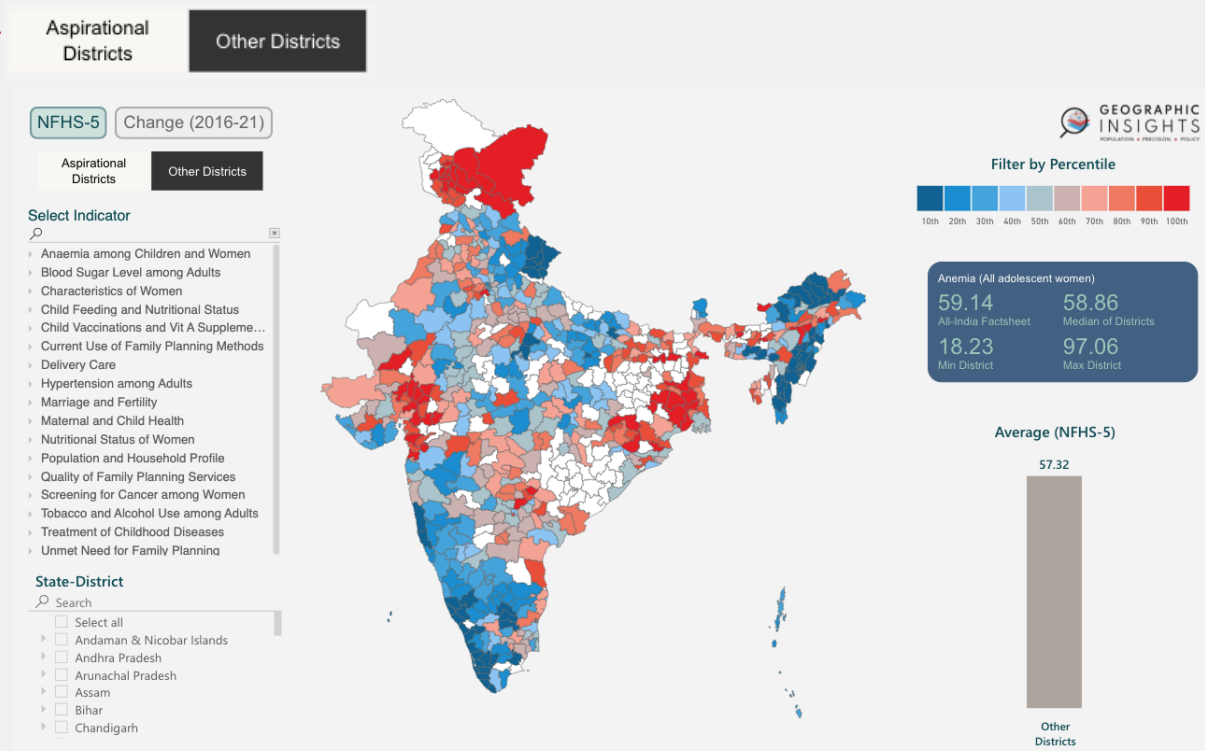




This visualization shows the results for both Aspirational Districts and Other Districts.



This visualization shows the results for only Aspirational Districts.



This visualization shows the results for all the districts **excluding the Aspirational Districts**.

2 Select indicator

The **select indicator filter** on the dashboard allows users to select the indicator for which the results will be visualized on the **NFHS-5 map view**.

→ For example: If the user wants to visualize **the Nutritional Status of Women - BMI below normal** across the districts of India:

Search for an indicator manually →

Select Indicator - +

- ▶ Anaemia among Children and Women
- ▶ Blood Sugar Level among Adults
- ▶ Characteristics of Women
- ▶ Child Feeding and Nutritional Status
- ▶ Child Vaccinations and Vit A Suppleme...
- ▶ Current Use of Family Planning Methods
- ▶ Delivery Care
- ▶ Hypertension among Adults
- ▶ Marriage and Fertility
- ▶ Maternal and Child Health
- ▶ Nutritional Status of Women
- ▶ Population and Household Profile
- ▶ Quality of Family Planning Services
- ▶ Screening for Cancer among Women
- ▶ Tobacco and Alcohol Use among Adults
- ▶ Treatment of Childhood Diseases
- ▶ Unmet Need for Family Planning

Expand/Collapse all the fields →

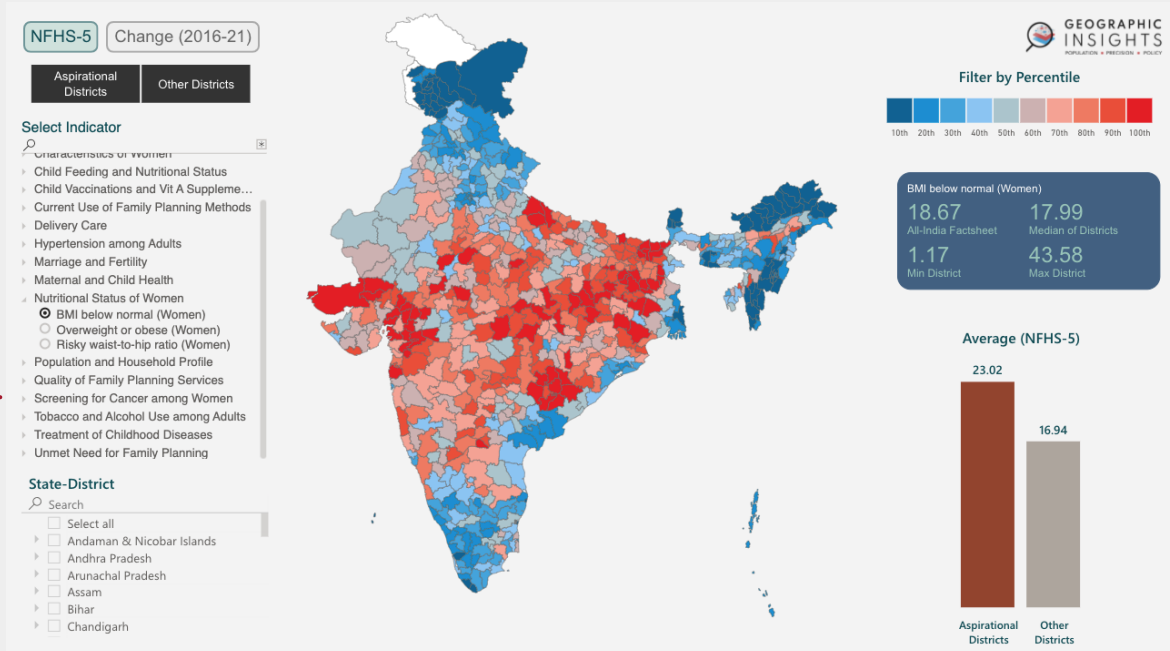
▶ Nutritional Status of Women

- BMI below normal (Women)
- Overweight or obese (Women)
- Risky waist-to-hip ratio (Women)

Expand the indicator →

- Nutritional Status of Women**
 - BMI below normal (Women)**
 - Overweight or obese (Women)
 - Risky waist-to-hip ratio (Women)

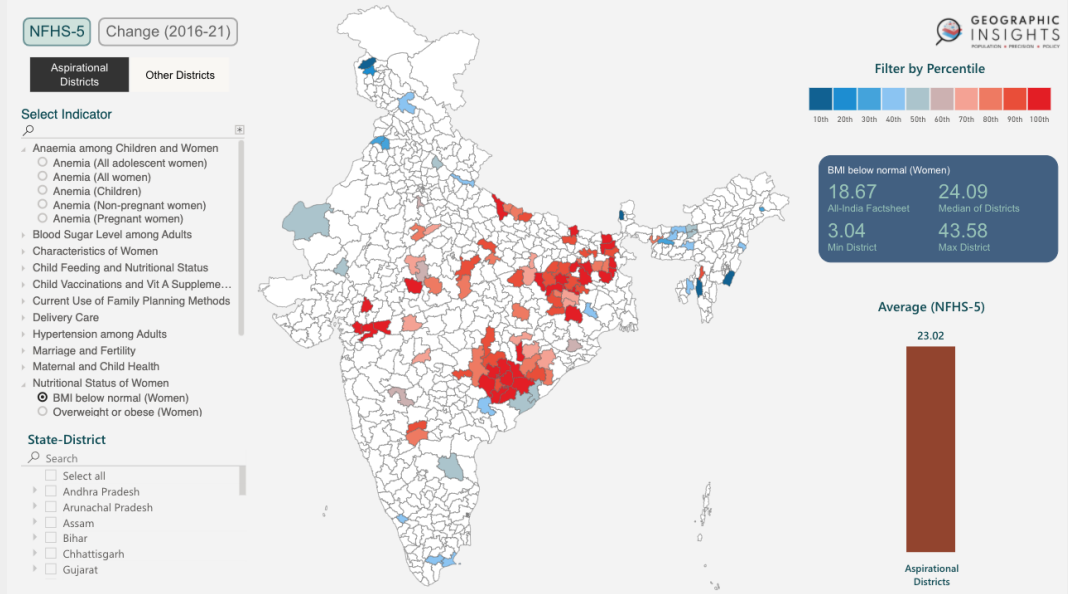
Selected indicator: Nutritional Status of Women - BMI below normal.

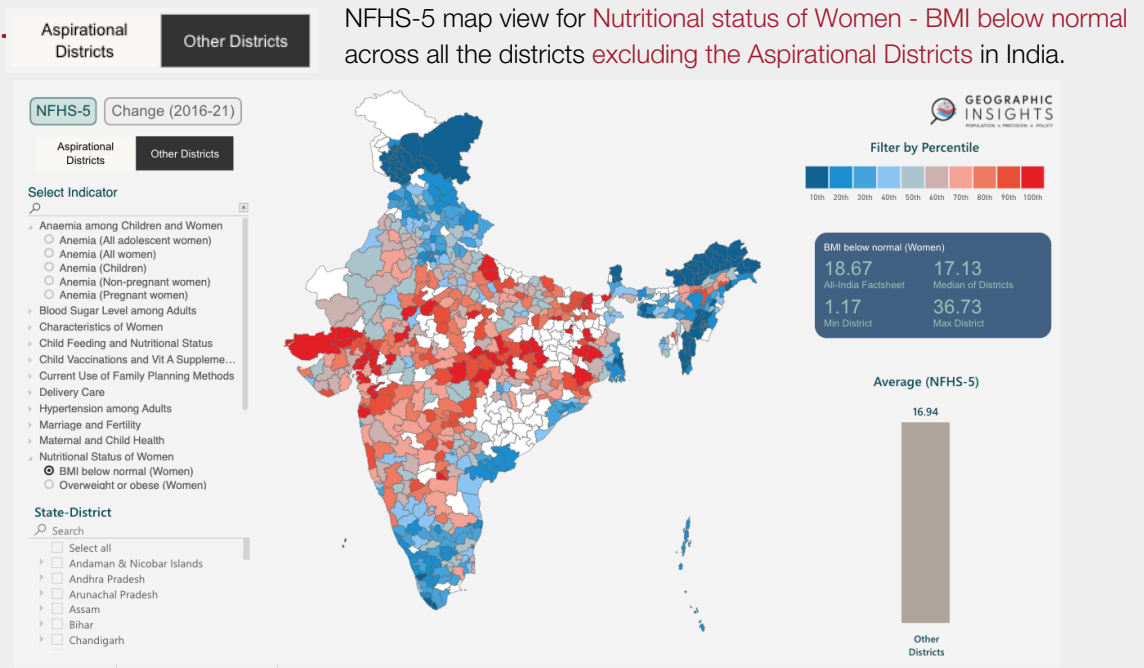


NFHS-5 map view for Nutritional Status of Women - BMI below normal across all the districts in India (2019-21).

- Aspirational Districts**
- Other Districts

NFHS-5 map view for Nutritional Status of Women - BMI below normal across all the Aspirational Districts in India.





3 Select State-District

The **select state-district filter** on the dashboard allows users to select the state for which the results will be visualized on **the NFHS-5 map view**.

→ For example: If the user wants to visualize **the Nutritional Status of Women - BMI below normal** across the districts of **Bihar**:

Search for the state manually →

State-District

Search

- Select all
- ▶ Andaman & Nicobar Islands
- ▶ Andhra Pradesh
- ▶ Arunachal Pradesh
- ▶ Assam
- ▶ Bihar
- ▶ Chandigarh

→ Or scroll down to choose

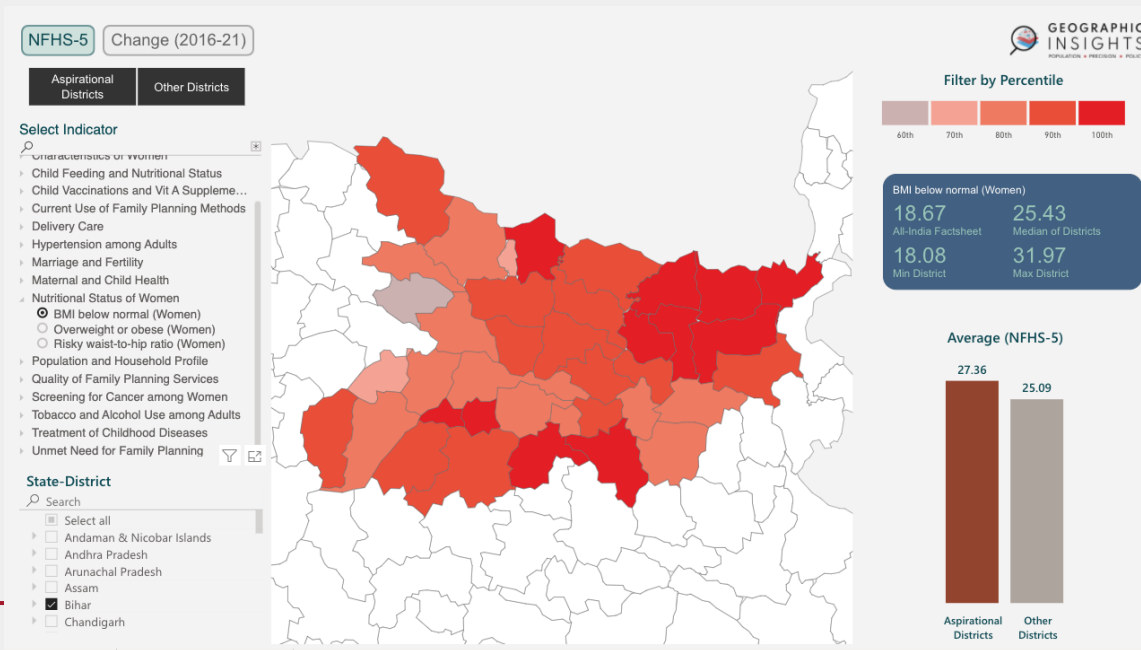
State-District

Search

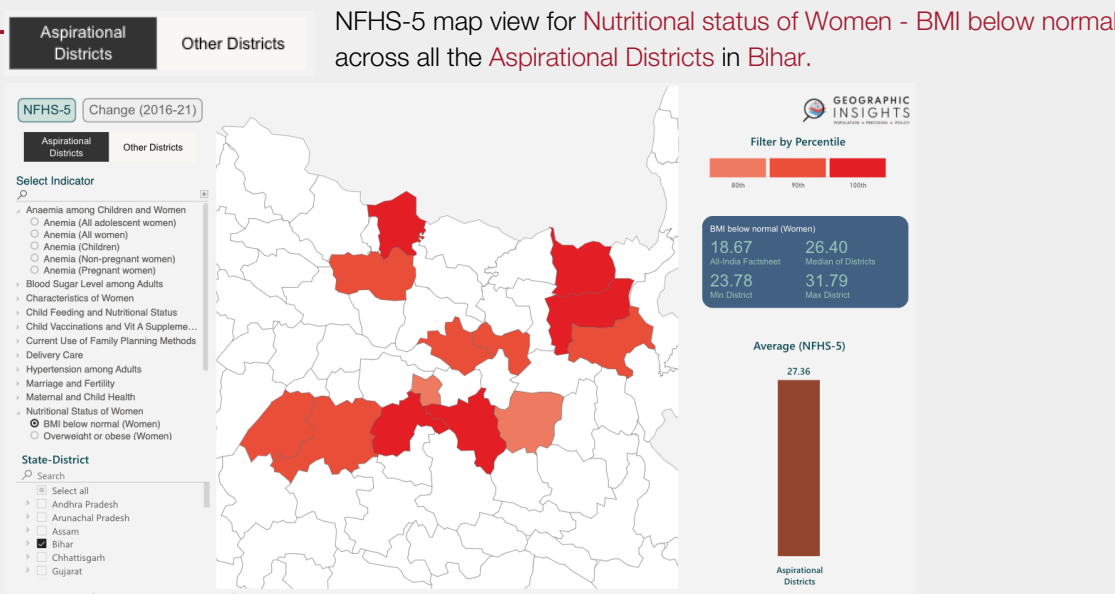
- Select all
- ▶ Andaman & Nicobar Islands
- ▶ Andhra Pradesh
- ▶ Arunachal Pradesh
- ▶ Assam
- ▶ Bihar
- ▶ Chandigarh

Selected state: Bihar →

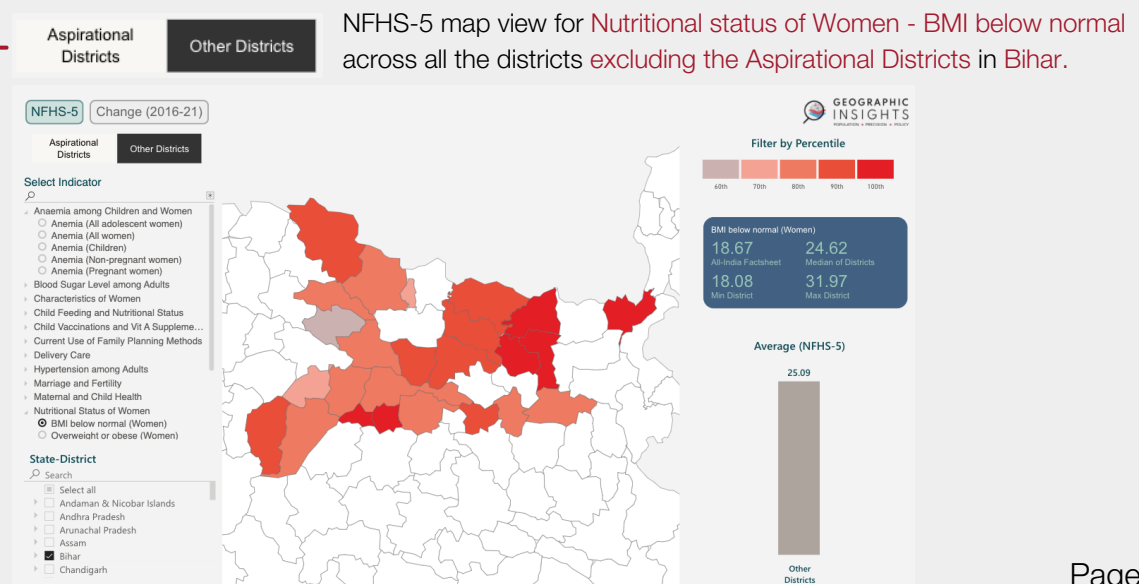
Note: Multiple selections are also possible in the **State-District filter**.



NFHS-5 map view for Nutritional status of Women - BMI below normal across all the districts in Bihar.



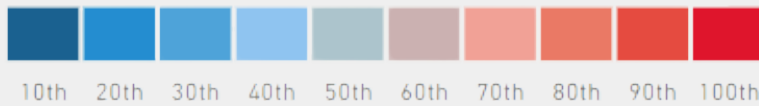
NFHS-5 map view for Nutritional status of Women - BMI below normal across all the Aspirational Districts in Bihar.



NFHS-5 map view for Nutritional status of Women - BMI below normal across all the districts excluding the Aspirational Districts in Bihar.

4 Filter by Percentile

Select Percentile by Filter

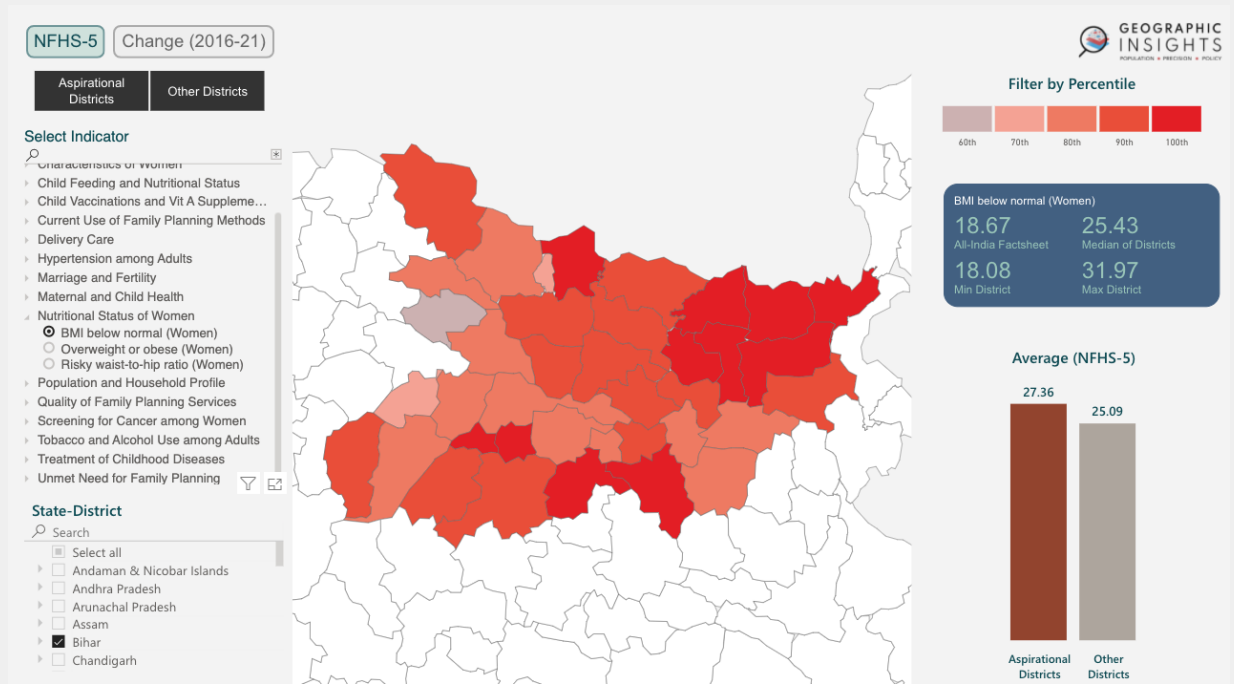


Users can select districts that fall into a national percentile category. For more information, see [Interpreting the Color Legend for NFHS-5](#) on [page 48](#).

Selecting multiple percentiles

The dashboard's functionality allows users to select multiple percentiles from the Select Percentile Filter and visualize their impact simultaneously on the NFHS-5 Map View.

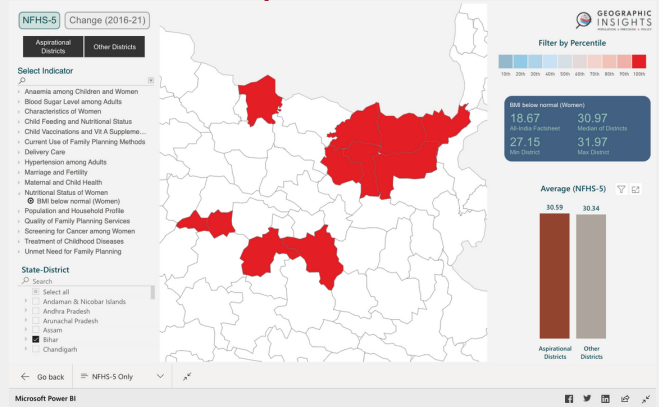
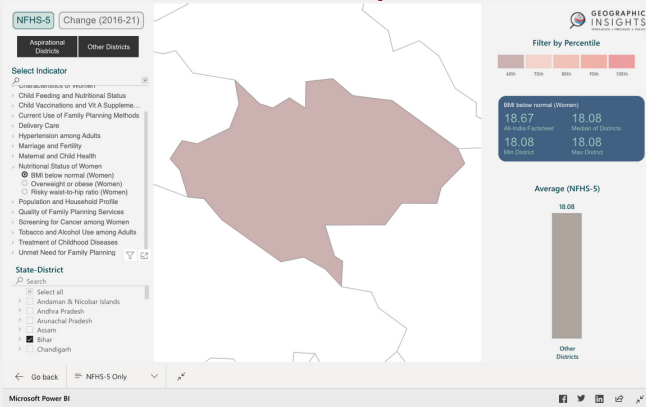
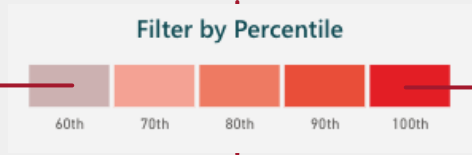
→ For example: If the user wants to visualize the **best and worst-performing** districts in **Bihar** for the **Nutritional Status of Women - BMI below normal**:



NFHS-5 map view for **Nutritional status of Women - BMI below normal** across all the districts in **Bihar**.

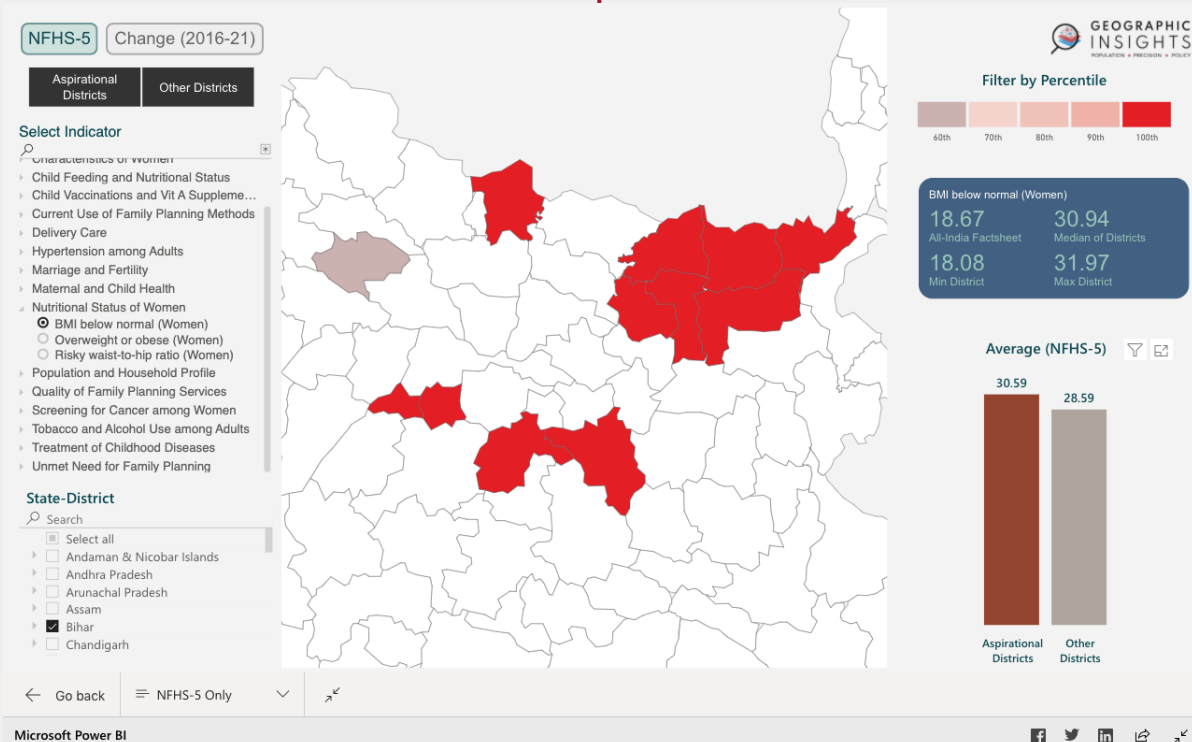
Select 60th percentile to visualize the best performing districts in Bihar for Nutritional Status of Women - BMI below normal.

Select 100th percentile to visualize the worst performing districts in Bihar Nutritional Status of Women - BMI below normal.



Use CTRL (on Windows) and CMD (on Mac) to select more than one percentile category.

Select both (60th Percentile) and (100th Percentile).



User Guide to Change between NFHS-4 & NFHS-5

This is the landing page of Change (2016-21) on the Dashboard

1 Aspirational Districts | Other Districts

2 Select Indicator

- Anaemia among Children and Women
 - Anemia (All women)
 - Anemia (Children)
 - Anemia (Non-pregnant women)
 - Anemia (Pregnant women)
- Blood Sugar Level among Adults
- Characteristics of Women
- Child Feeding and Nutritional Status
- Child Vaccinations and Vit A Suppleme...
- Current Use of Family Planning Methods
- Delivery Care
- Hypertension among Adults
- Marriage and Fertility
- Maternal and Child Health
- Nutritional Status of Women
- Population and Household Profile
- Quality of Family Planning Services

3 State-District

Select all

- Andaman & Nicobar Islands
- Andhra Pradesh
- Arunachal Pradesh
- Assam
- Bihar
- Chhattisgarh

4 Filter by Changes between NFHS-4 and NFHS-5

128 Highest Improvement | 129 Improvement | 223 Worsened | 224 Extremely Worsened

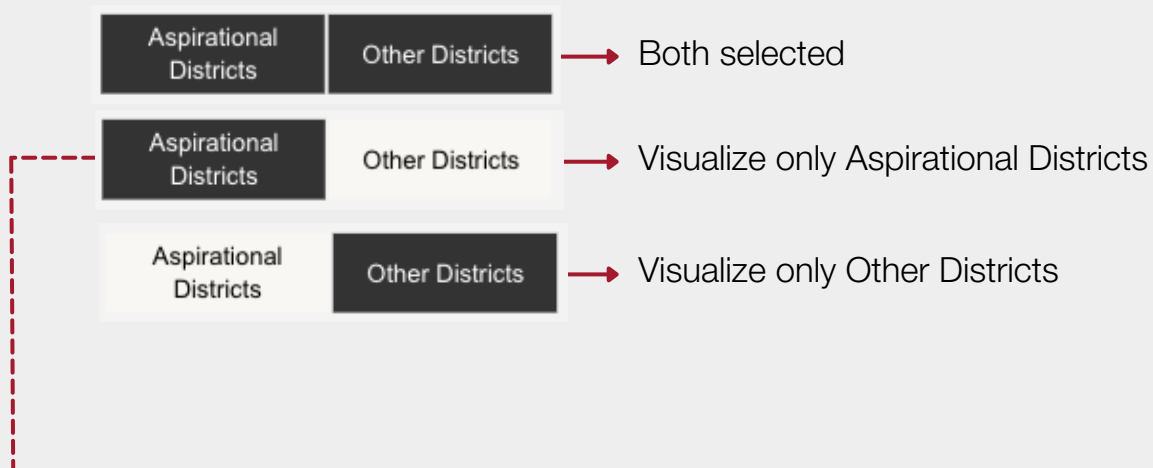
District, State	Change	NFHS5	NFHS4
Kargil, LA	62.3	92.0	29.7
Leh(Ladakh), LA	59.9	93.5	33.6
Anantnag, JK	47.5	74.3	26.8
Doda, JK	45.8	66.5	20.7
Kishtwar, JK	44.5	84.8	40.3
Dibang Valley, AR	40.0	62.9	22.9
Kannauj, UP	39.3	65.2	25.9
Charaideo, AS	37.1	72.3	35.2
Ganderbal, JK	34.8	77.2	42.4
Kulgam, JK	34.7	77.0	42.3
Tawang, AR	34.2	59.1	24.9
Dausa, RJ	33.2	60.3	27.1
Sivasagar, AS	32.4	67.6	35.2
Anugul, OR	31.8	75.8	44.0
Golaghat, AS	31.7	77.2	45.5
Jammu, JK	31.0	66.6	35.6
Mainpuri, UP	30.8	57.8	27.0
Bandipore, JK	30.4	73.7	43.3
Kanshiram Nagar, UP	30.2	64.6	34.4
Surat, GJ	30.0	69.0	39.0
Farrukhabad, UP	29.9	56.9	27.0
Mayurbhanj, OR	29.8	72.2	42.4
Chhota Udaipur, GJ	29.7	78.9	49.2
Debagarh, OR	29.6	72.2	42.6
Barpeta, AS	29.3	64.8	35.5
Jorhat, AS	29.2	71.8	42.6
Etawah, UP	29.2	57.4	28.2
Kendujhar, OR	28.7	69.2	40.5

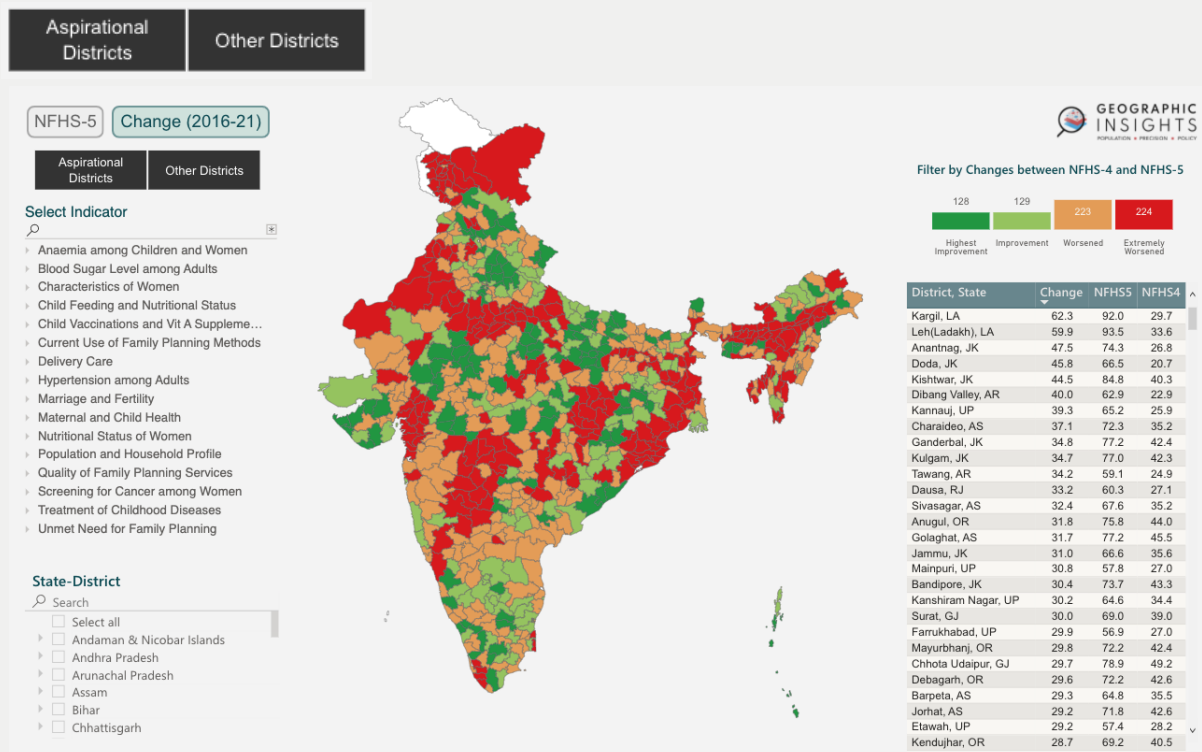
This User Guide describes all the features of the Change page on the dashboard, which are highlighted with the numbers shown above.

1 Toggle between Aspirational Districts/Other Districts

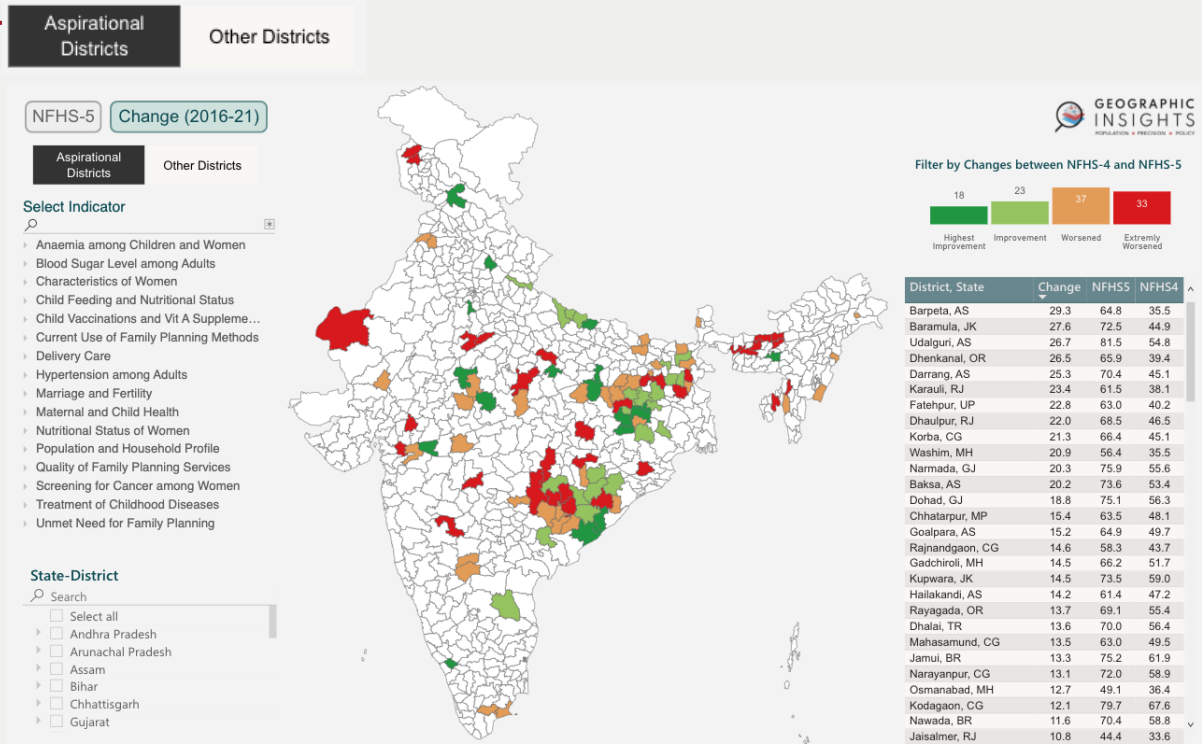
This feature of the dashboard allows the user to toggle between the Change (2016-21) visualization on the map for **Aspirational Districts** and **Other Districts**.

The toggle button has 3 possible selection cases:

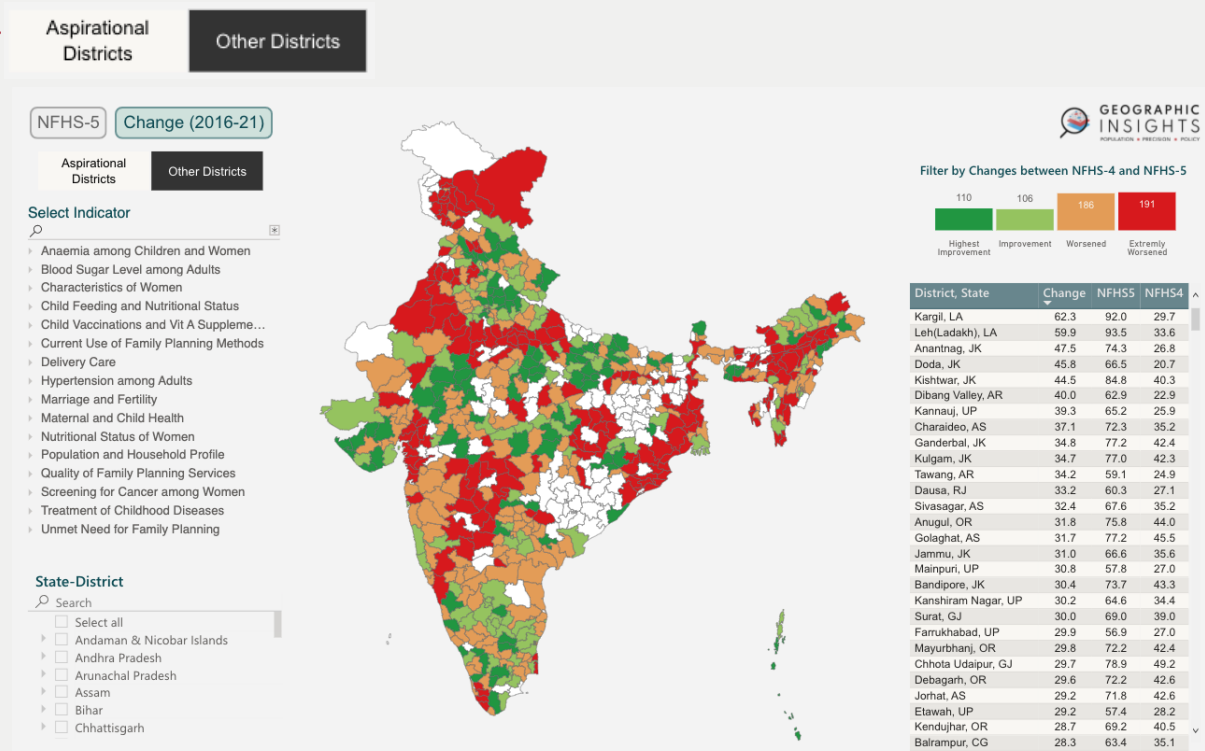




This visualization shows the results for both Aspirational Districts and Other Districts.



This visualization shows the results for only Aspirational Districts.



This visualization shows the results for all the districts **excluding the Aspirational Districts**.

2 Select indicator

The **select indicator filter** on the dashboard allows users to select the indicator for which the results will be visualized on **the change map view**.

→ For example: If the user wants to visualize **the change in Nutritional Status of Women - BMI below normal** across the districts of India:

Search for an indicator manually →

Expand/Collapse all the fields →

Expand the indicator →

Select Indicator [- +] [✕]

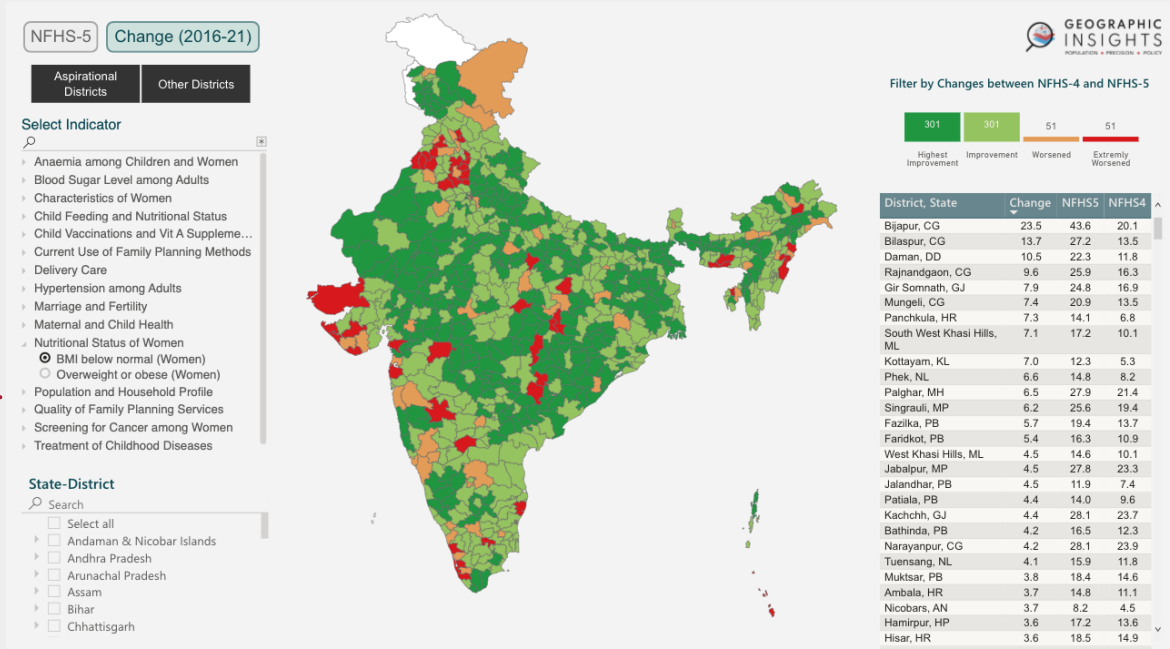
- ▶ Anaemia among Children and Women
- ▶ Blood Sugar Level among Adults
- ▶ Characteristics of Women
- ▶ Child Feeding and Nutritional Status
- ▶ Child Vaccinations and Vit A Suppleme...
- ▶ Current Use of Family Planning Methods
- ▶ Delivery Care
- ▶ Hypertension among Adults
- ▶ Marriage and Fertility
- ▶ Maternal and Child Health
- ▶ Nutritional Status of Women
- ▶ Population and Household Profile
- ▶ Quality of Family Planning Services
- ▶ Screening for Cancer among Women
- ▶ Tobacco and Alcohol Use among Adults
- ▶ Treatment of Childhood Diseases
- ▶ Unmet Need for Family Planning

▶ Nutritional Status of Women

- BMI below normal (Women)
- Overweight or obese (Women)
- Risky waist-to-hip ratio (Women)

- Nutritional Status of Women
- BMI below normal (Women)
 - Overweight or obese (Women)
 - Risky waist-to-hip ratio (Women)

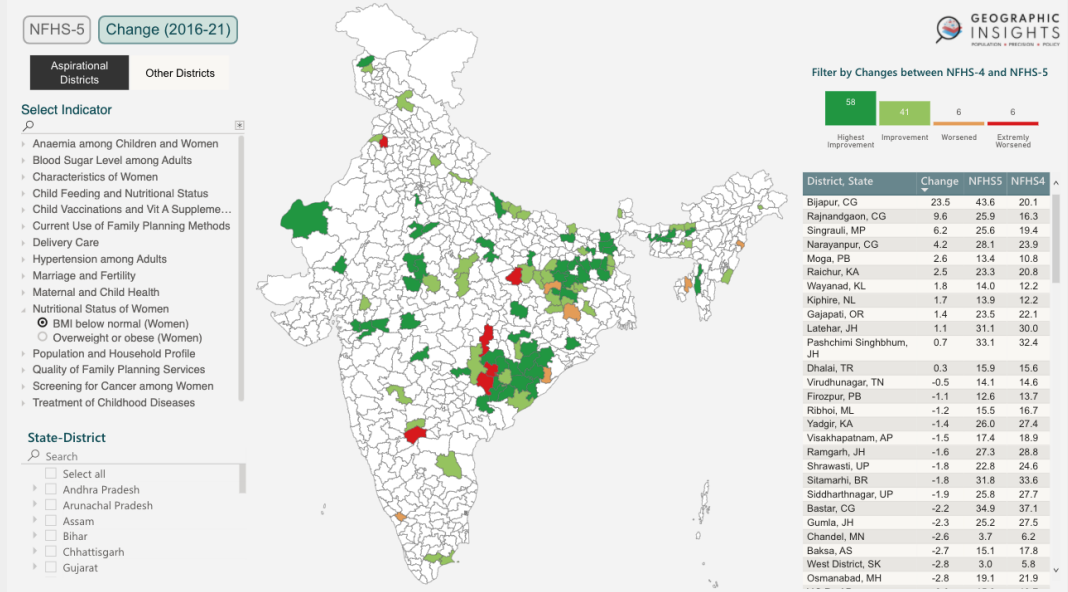
Selected indicator: Nutritional status of Women - BMI below normal.



The Change (2016-21) map view for Nutritional status of Women - BMI below normal across all the districts in India.

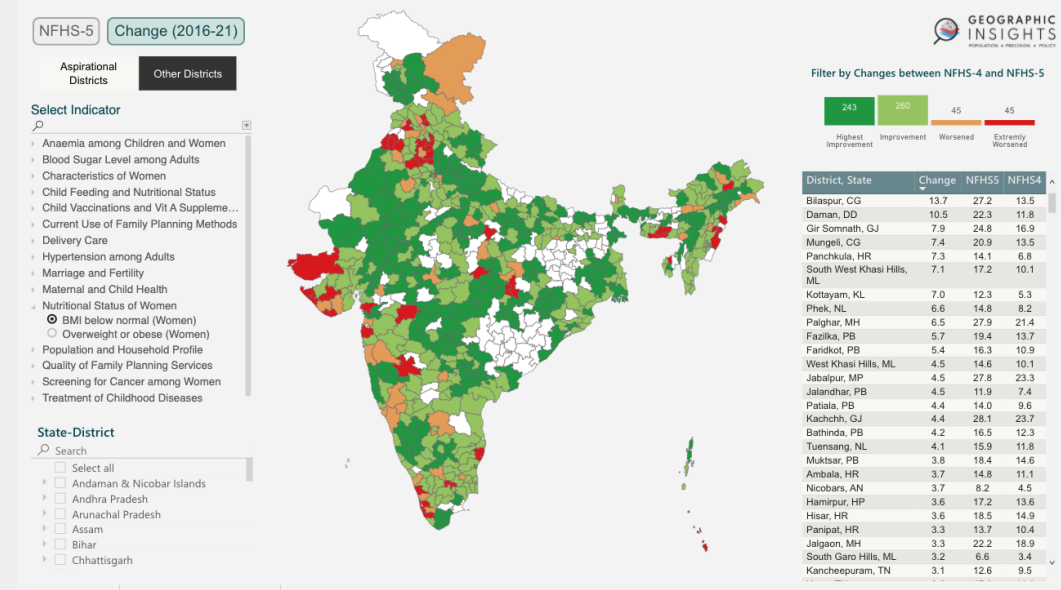
- Aspirational Districts
- Other Districts

The Change (2016-21) map view for Nutritional status of Women - BMI below normal across all the Aspirational Districts in India.



Aspirational Districts Other Districts

The Change (2016-21) map view for **Nutritional status of Women - BMI below normal** across all the districts **except Aspirational Districts** in India.



3 Select State-District

The **select state-district filter** on the dashboard allows the users to select the state for which the results will be visualized on **the change map view**.

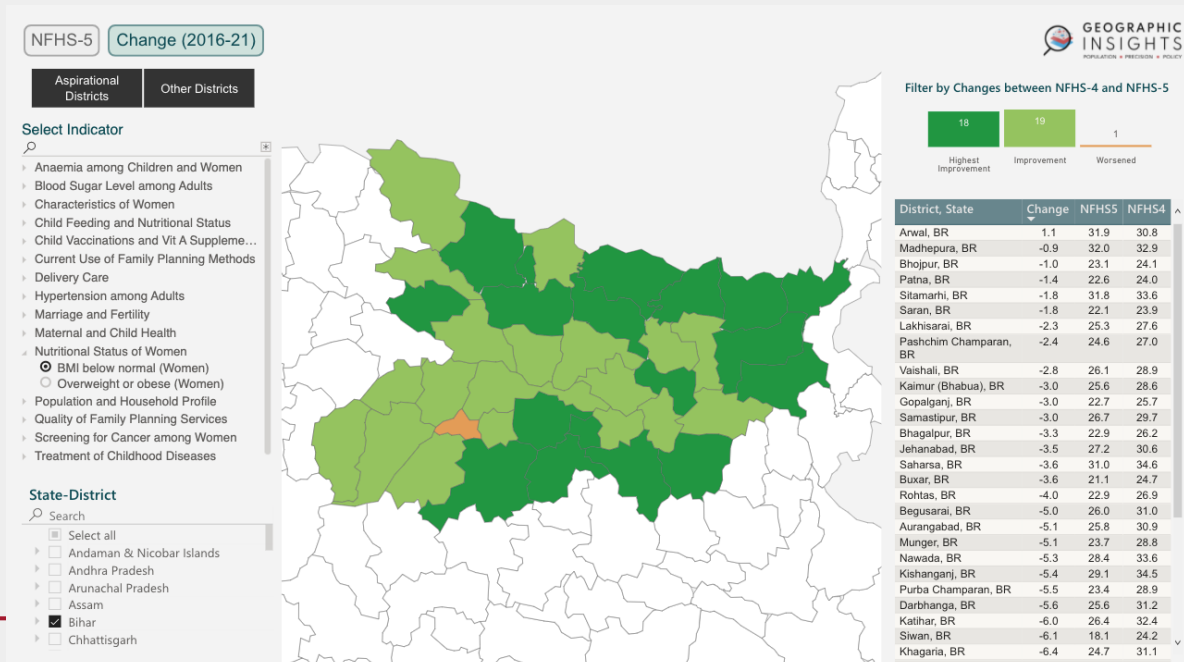
→ For example: If the user wants to visualize **the change in Nutritional Status of Women - BMI below normal** across the districts of **Bihar**:

Search for the state manually ←

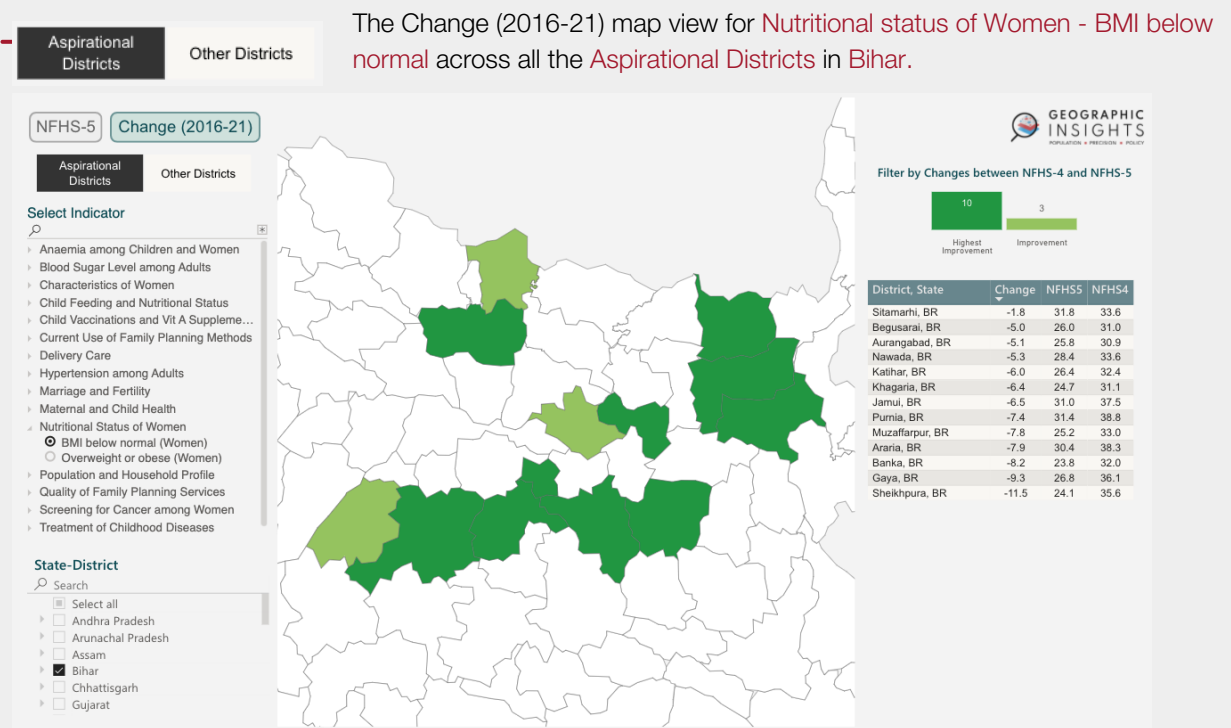
Or scroll down to choose →

Selected state: Bihar ←

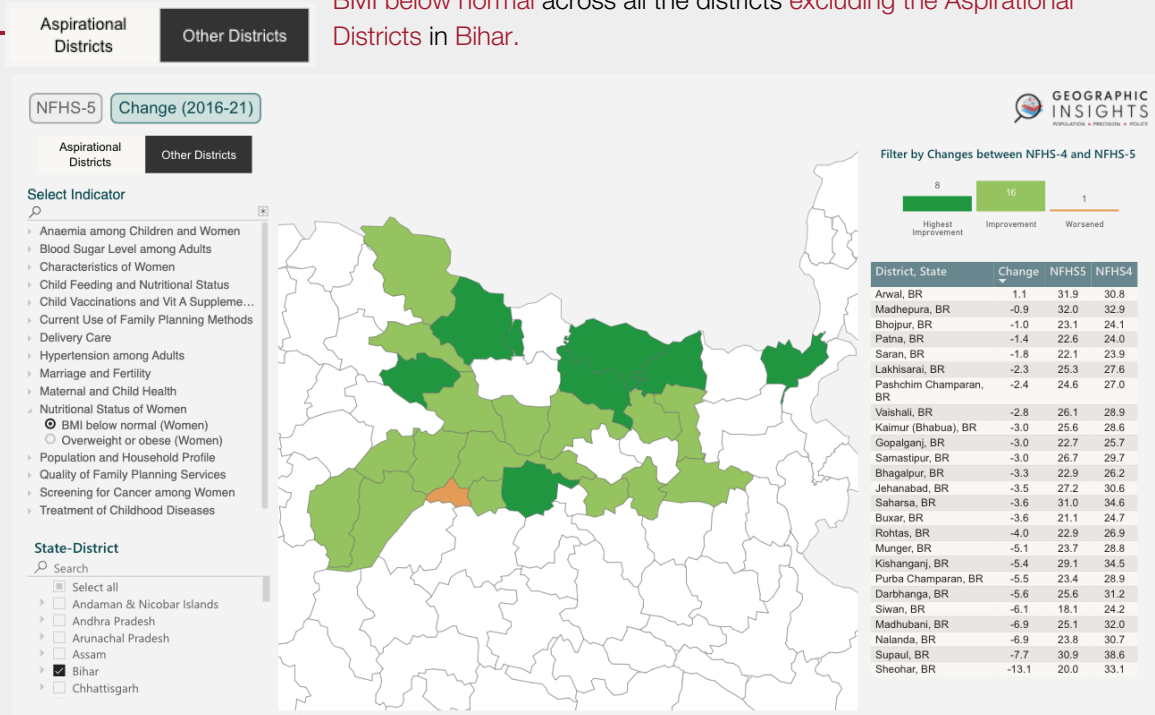
Note: Multiple selections are also possible in the **State-District** filter.



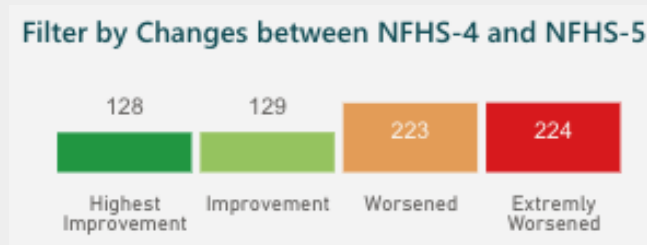
The Change (2016-21) map view for Nutritional status of Women - BMI below normal across all the districts of Bihar.



The Change (2016-21) map view for **Nutritional status of Women - BMI below normal** across all the districts excluding the Aspirational Districts in Bihar.



4 Filter by Changes between NFHS-4 and NFHS-5



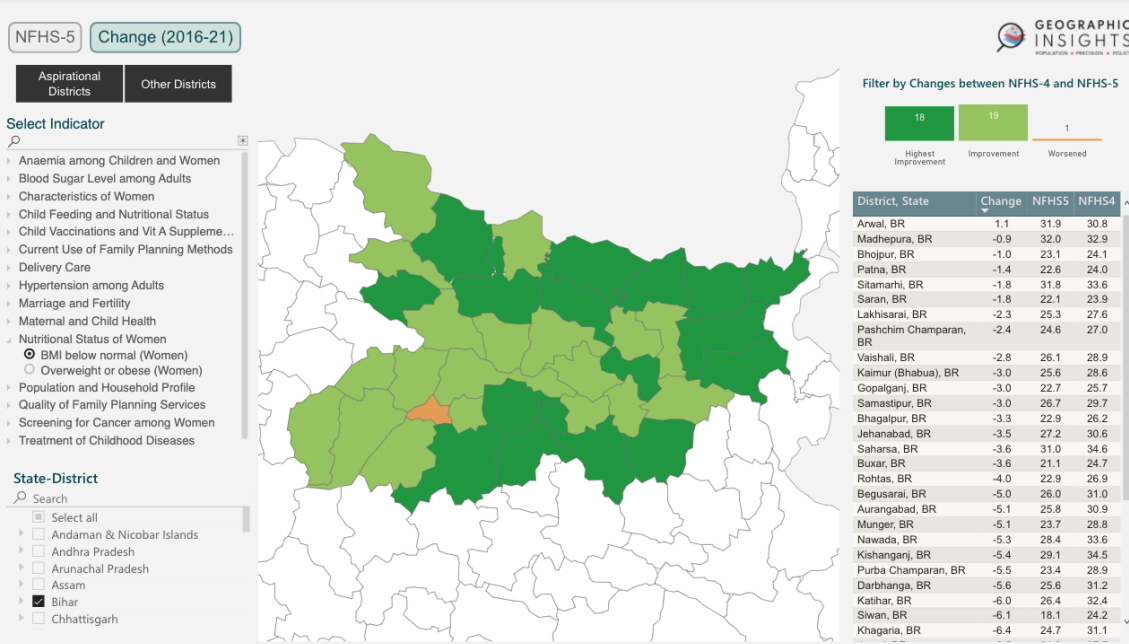
Change Filter for **Anemia (All women)**

The Change map is divided into four distinct sections: Highest improvement, Improvement, Worsened and Extremely Worsened. For more information, see [Interpreting the Color Legend for the Change between NFHS-4 and NFHS-5](#) on page 48.

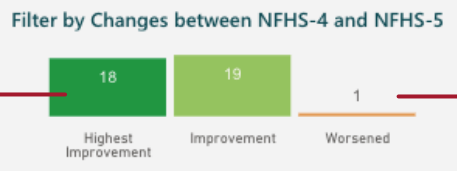
Selecting multiple change groups

The dashboard's functionality allows users to select multiple change groups from the **Change Filter** and visualize their impact simultaneously on the Change Map View.

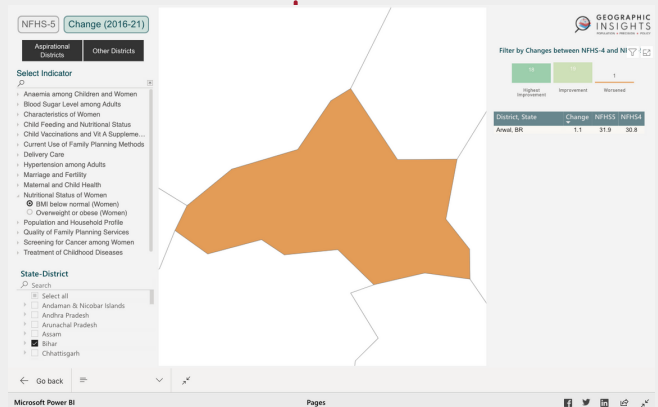
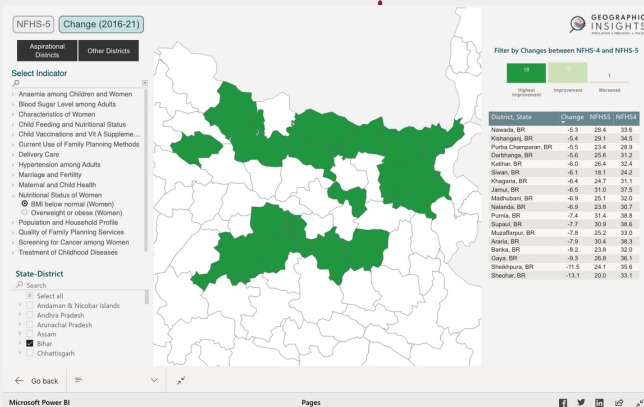
→ For example: If the user wants to visualize the **worsened districts** and the **districts with highest improvement** in Bihar for the **Nutritional Status of Women - BMI below normal**:



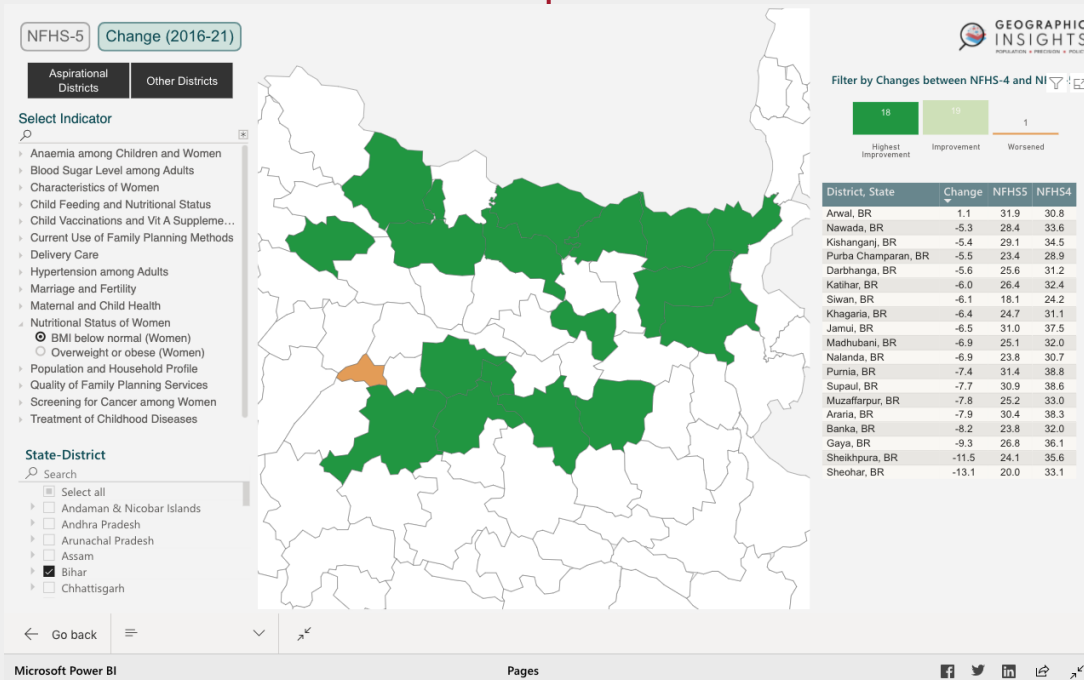
Select "Highest Improvement" to visualize the districts which showed the best positive change in Bihar for Nutritional Status of Women - BMI below normal.



Select "Worsened" to visualize the districts which showed most negative change in Bihar for Nutritional Status of Women - BMI below normal.



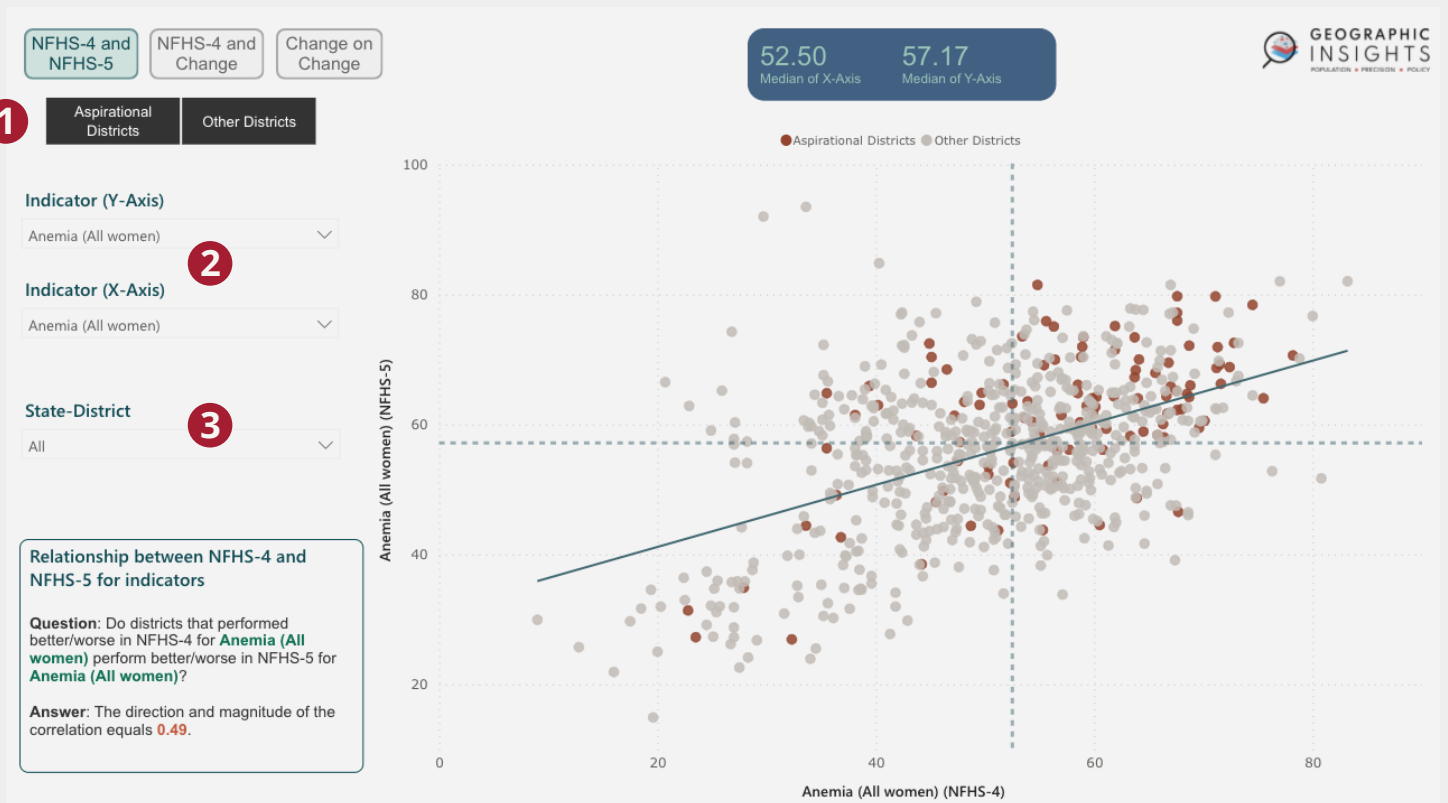
Use CTRL (on Windows) and CMD (on Mac) to select more than one change category.



User Guide to Analysis Page

- Analysis of indicators between NFHS-4 and NFHS-5 NFHS-4 and NFHS-5

This section of the Analysis page can be used to compare the impact of an indicator as per NFHS-4 and NFHS-5 or visualize the correlation between different indicators from NFHS-4 and NFHS-5.



This User Guide describes all the features of the Analysis page on the dashboard, which are highlighted with the numbers shown above.

1 Toggle between Aspirational Districts/Other Districts

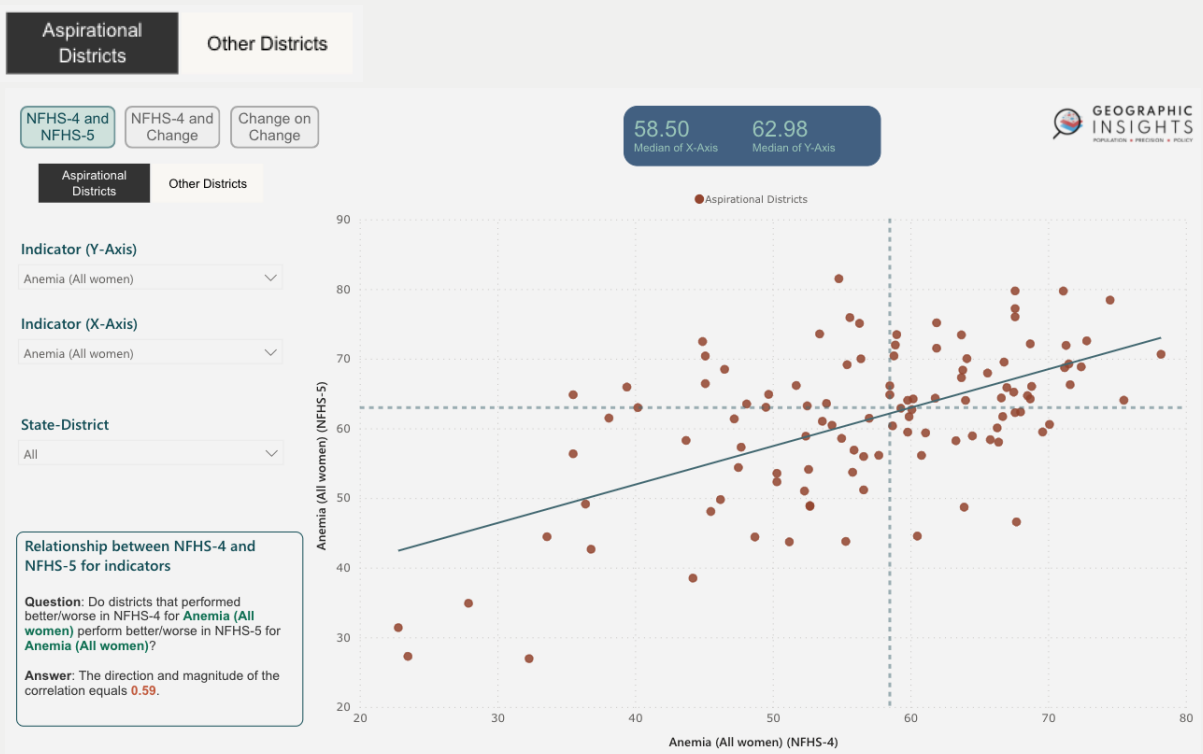
This dashboard feature allows the user to toggle between the results on the map for Aspirational Districts and other districts.

The toggle button has 3 possible selection cases:





This visualization shows the results for both Aspirational Districts and Other Districts.



This visualization shows the results for only Aspirational Districts.



This visualization shows the results for all the districts **excluding the Aspirational Districts**.

→ For example: If the user wants to determine the correlation between Anemia in Women as per NFHS-4 and NFHS-5:

2 Indicator (Y-Axis)

Select an indicator from the **Indicator (Y-Axis)** filter.

Indicator (Y-Axis)

Anemia (All women) ▾

Indicator (Y-Axis)

Anemia (All women) ▲

Search

- 3 doses of penta or DPT vaccine
- 3 doses of penta or hepatitis B vaccine
- 3 doses of polio vaccine
- Adequate diet (All children - 6-23 months)
- Adequate diet (Breastfeeding - 6-23 mon...
- Adequate diet (Non-breastfeeding - 6-23...
- Adolescent pregnancy
- Anemia (All women)**
- Anemia (Children)
- Anemia (Non-pregnant women)

→ Expand/Collapse all the fields

Select the indicator for (Y-Axis) - Anemia (All Women) ←

Indicator (X-Axis)

Select another indicator from the **Indicator (X-Axis)** filter to visualize its correlation with the indicator selected for (Y-Axis).

Indicator (X-Axis)

Anemia (All women) ▼ → Expand/Collapse all the fields

Indicator (X-Axis)

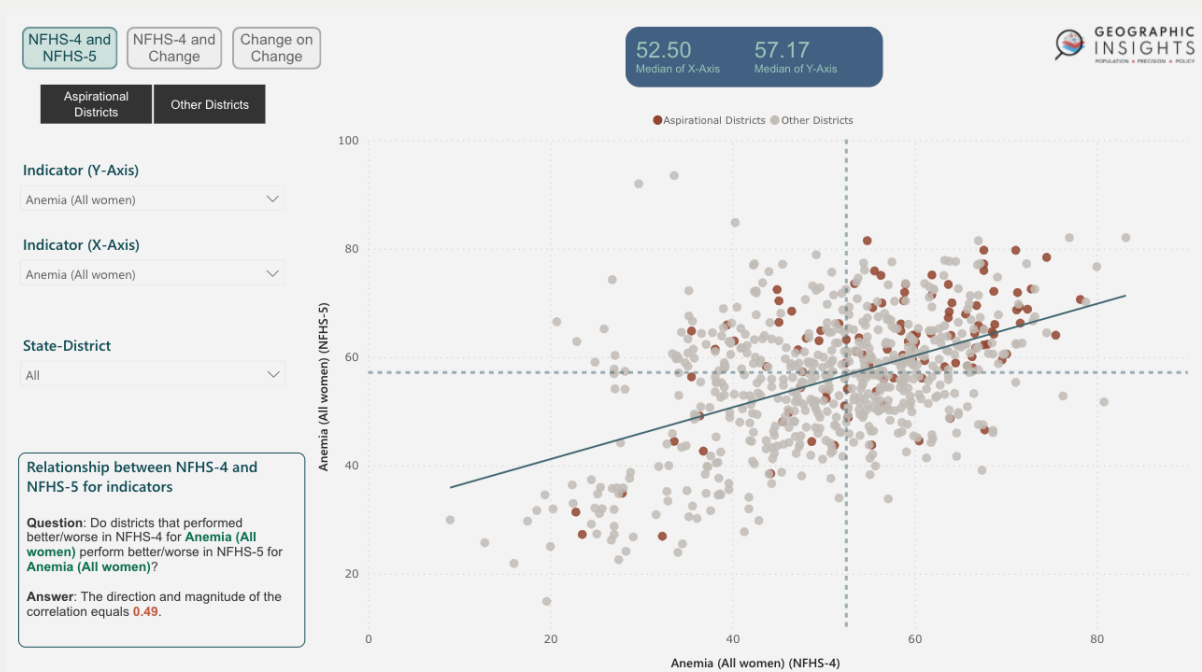
Anemia (All women) ▲

Search

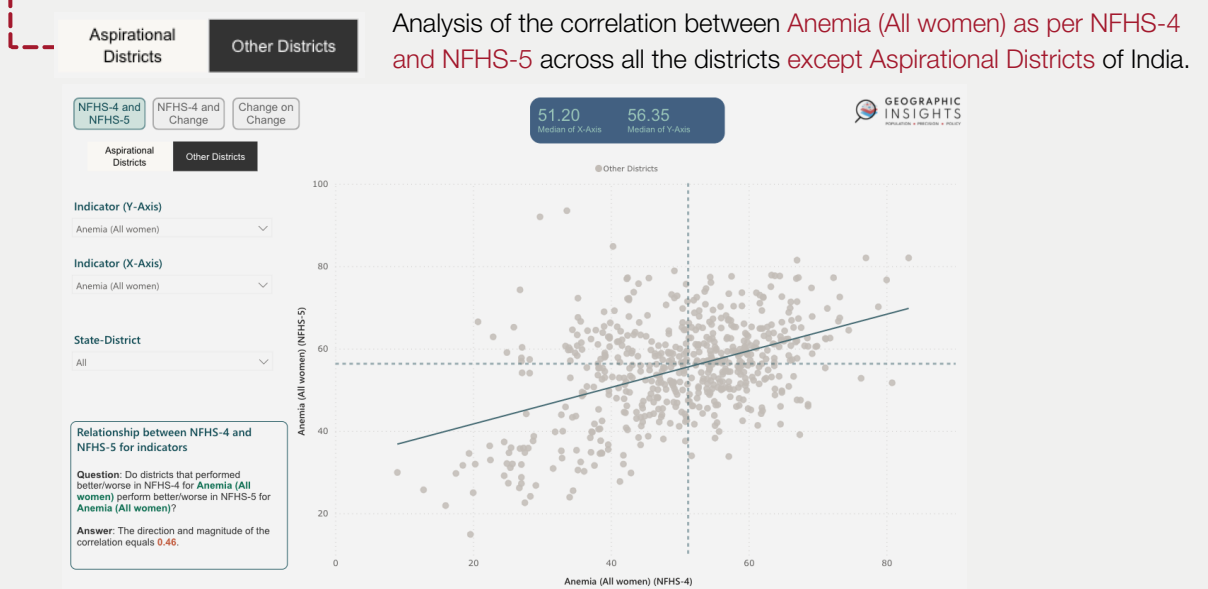
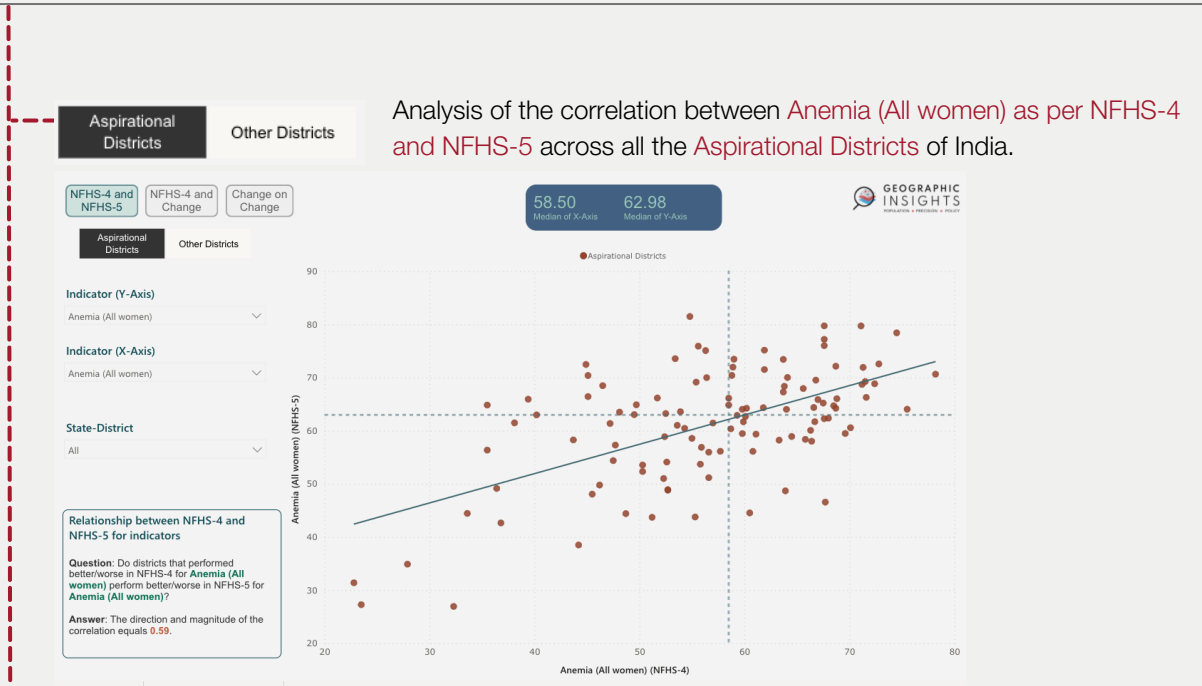
- 10 or more years of schooling (Women)
- 3 doses of penta or DPT vaccine
- 3 doses of penta or hepatitis B vaccine
- 3 doses of polio vaccine
- Adequate diet (All children - 6-23 months)
- Adequate diet (Breastfeeding - 6-23 mon...)
- Adequate diet (Non-breastfeeding - 6-23...
- Adolescent pregnancy
- Anemia (All women)

Select the indicator for (X-Axis) - Anemia (All Women) ←

Aspirational Districts Other Districts



Analysis of the correlation between **Anemia (All women)** as per NFHS-4 and NFHS-5 across all the districts of India.



→ For example: If the user wants to determine the correlation between **Anemia in Women** as per NFHS-4 and NFHS-5 across the districts of **Bihar**:

3 Select State-District

The **Select State-District** filter on the dashboard allows users to select the state for which the results will be visualized on the **NFHS-5 map view**.

State-District

All



→ Expand/Collapse all the fields

State-District

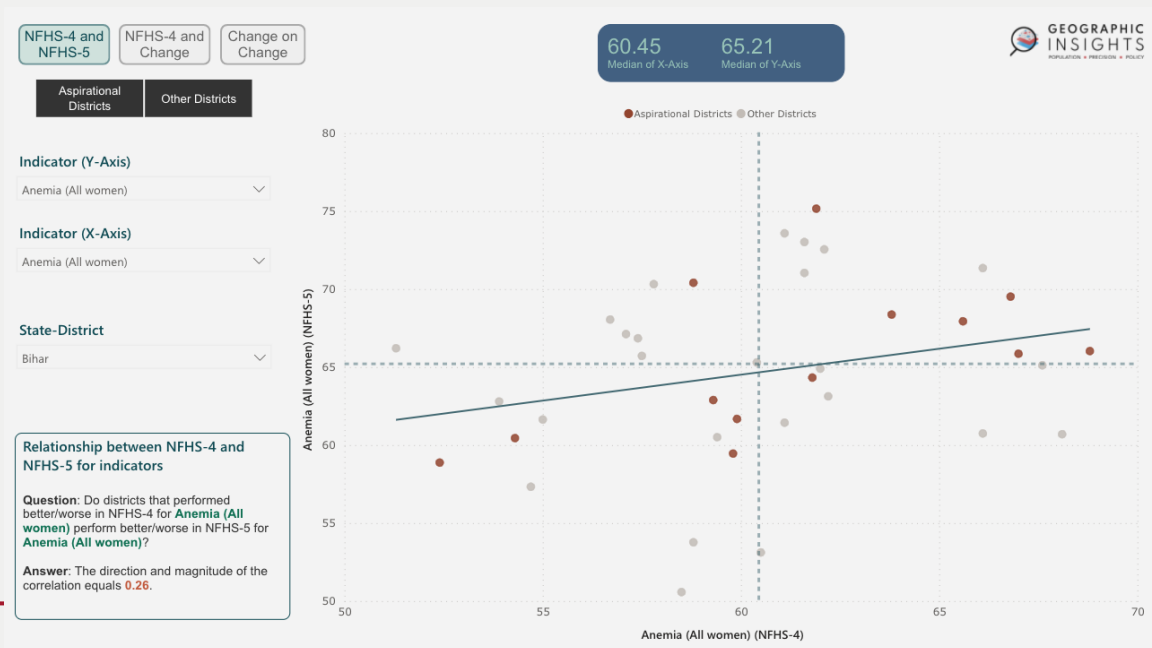
Bihar

Search

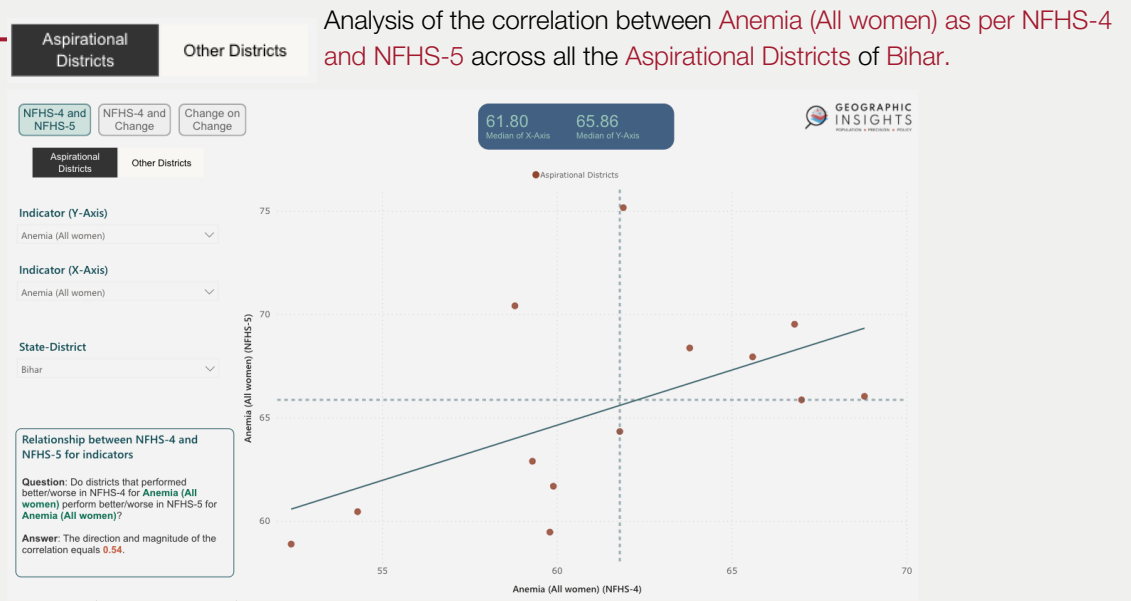
- Select all
- Andaman & Nicobar Islands
- Andhra Pradesh
- Arunachal Pradesh
- Assam
- Bihar
- Chhattisgarh
- Daman and Diu
- Goa

Select the state - Bihar

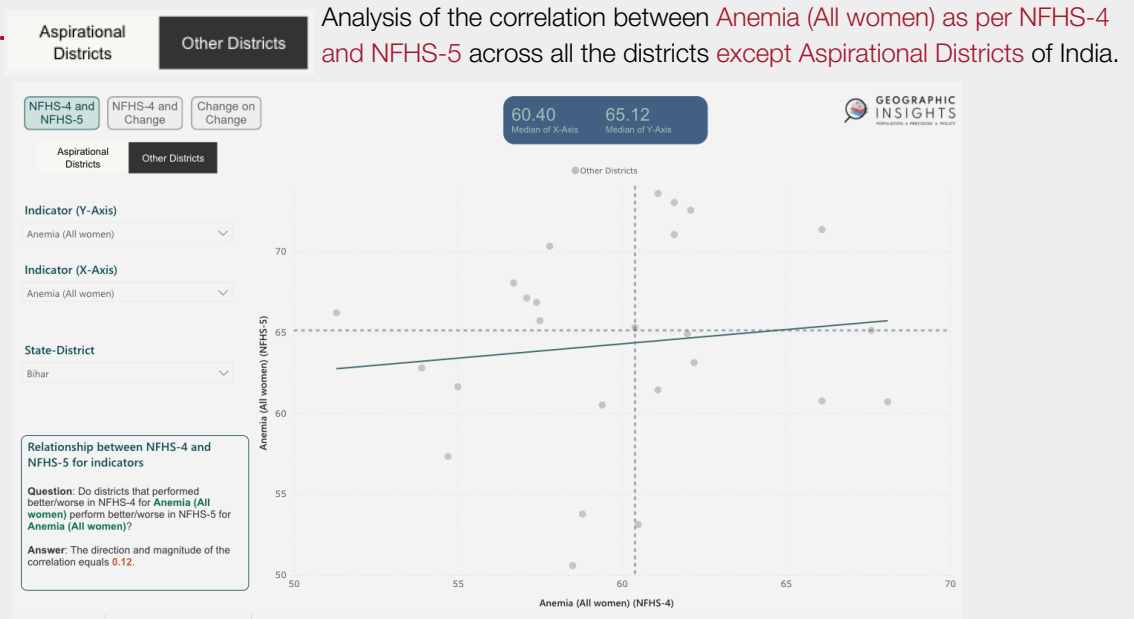
Note: Multiple selections are also possible in the State-District filter.



Analysis of the correlation between Anemia (All women) as per NFHS-4 and NFHS-5 across all the districts of Bihar.



Analysis of the correlation between Anemia (All women) as per NFHS-4 and NFHS-5 across all the Aspirational Districts of Bihar.



• Analysis of indicators between NFHS-4 and Change NFHS-4 and Change

This section of the Analysis page can be used to compare the impact of an indicator as per NFHS-4 and the change (NFHS-5 minus NFHS-4).



This is the landing page of Analysis of indicators between NFHS-4 and Change.

→ For example: If the user wants to determine whether the increase of IFA tablets decreases the Anemia prevalence across the districts:

2 Select indicator on Y-Axis

Select an indicator from the **Indicator (Y-Axis)** filter.

Indicator (Y-Axis)

Anemia (All women) ▾ → Expand/Collapse all the fields

Indicator (Y-Axis)

Anemia (All women) ▲

Search

- 3 doses of penta or DPT vaccine
- 3 doses of penta or hepatitis B vaccine
- 3 doses of polio vaccine
- Adequate diet (All children - 6-23 months)
- Adequate diet (Breastfeeding - 6-23 mon...
- Adequate diet (Non-breastfeeding - 6-23...
- Adolescent pregnancy
- Anemia (All women)
- Anemia (Children)
- Anemia (Non-pregnant women)

Select the indicator for (X-Axis) - Anemia (All Women)

Select indicator on X-Axis

Select another indicator from the **Indicator (X-Axis)** filter to visualize its correlation with the indicator selected for (Y-Axis).

Indicator (X-Axis)

Anemia (All women) ▾ → Expand/Collapse all the fields

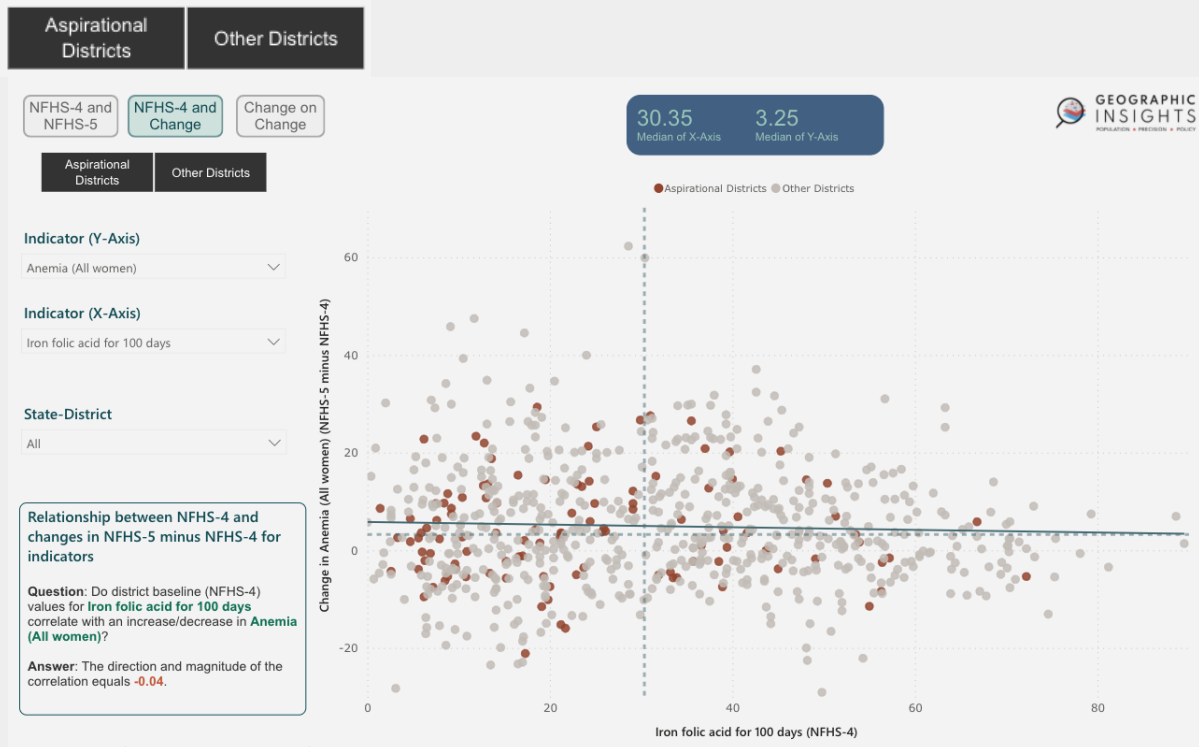
Indicator (X-Axis)

Iron folic acid for 100 days ▲

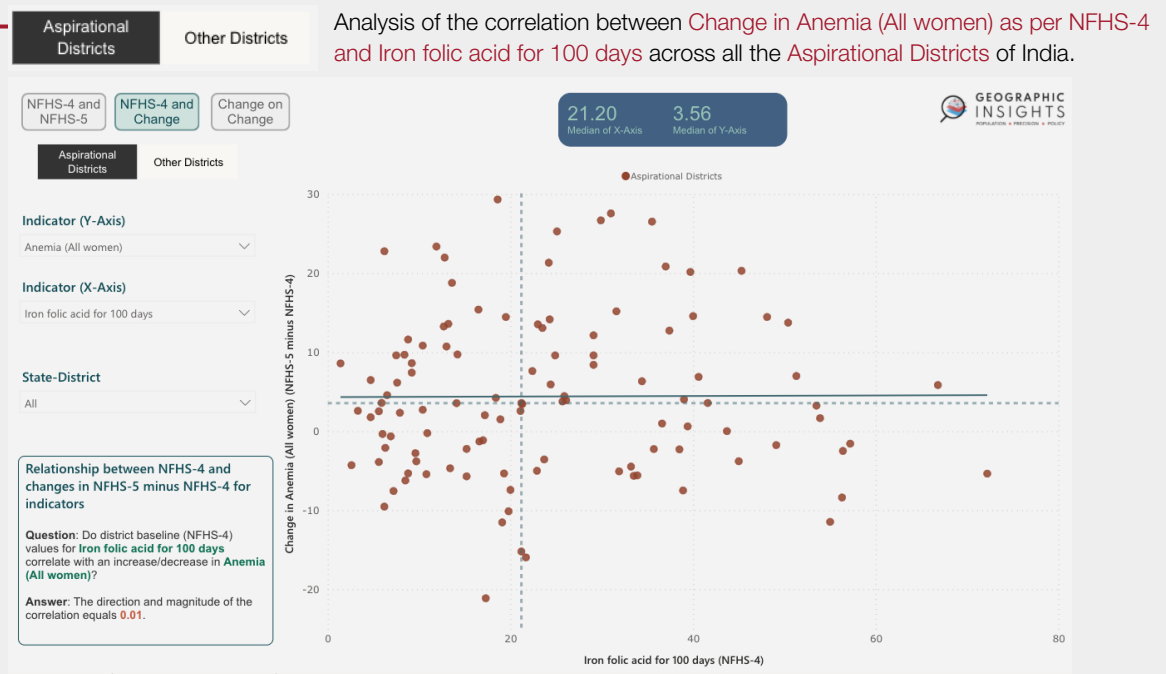
Search

- Improved water
- In public facility
- Institutional births
- Interaction of health worker
- Iodized salt
- Iron folic acid for 100 days
- IUD/PPIUD
- Last birth protected against neonatal teta...
- Literate women
- Male sterilization

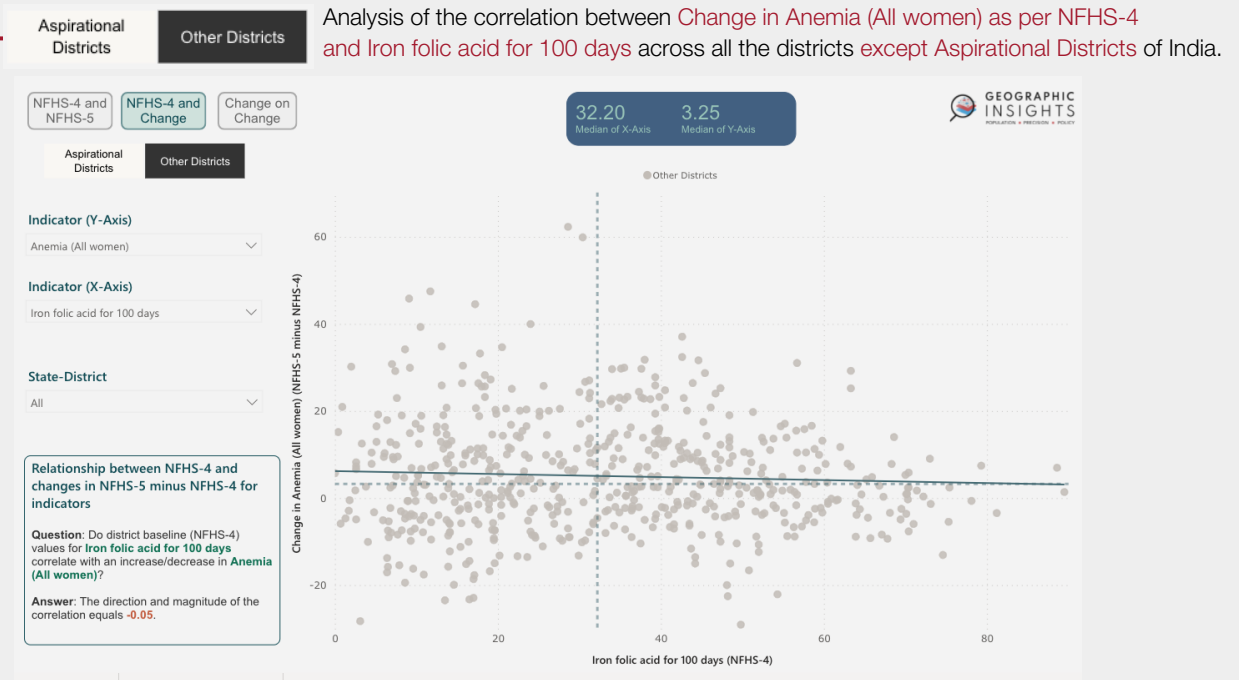
Select the indicator for X-Axis - Iron folic acid for 100 days



Analysis of the correlation between **Change in Anemia (All women)** as per NFHS-4 and **Iron folic acid for 100 days** across all the districts of India.



Analysis of the correlation between **Change in Anemia (All women)** as per NFHS-4 and **Iron folic acid for 100 days** across all the **Aspirational Districts** of India.



→ For example: If the user wants to determine whether the increase of IFA tablets decreases the Anemia prevalence across the districts of Bihar:

3 Select State-District

The **select state-district filter** on the dashboard allows the users to select the state for which the results will be visualized on **the NFHS-5 map view**.

State-District

All ▾ → Expand/Collapse all the fields

State-District

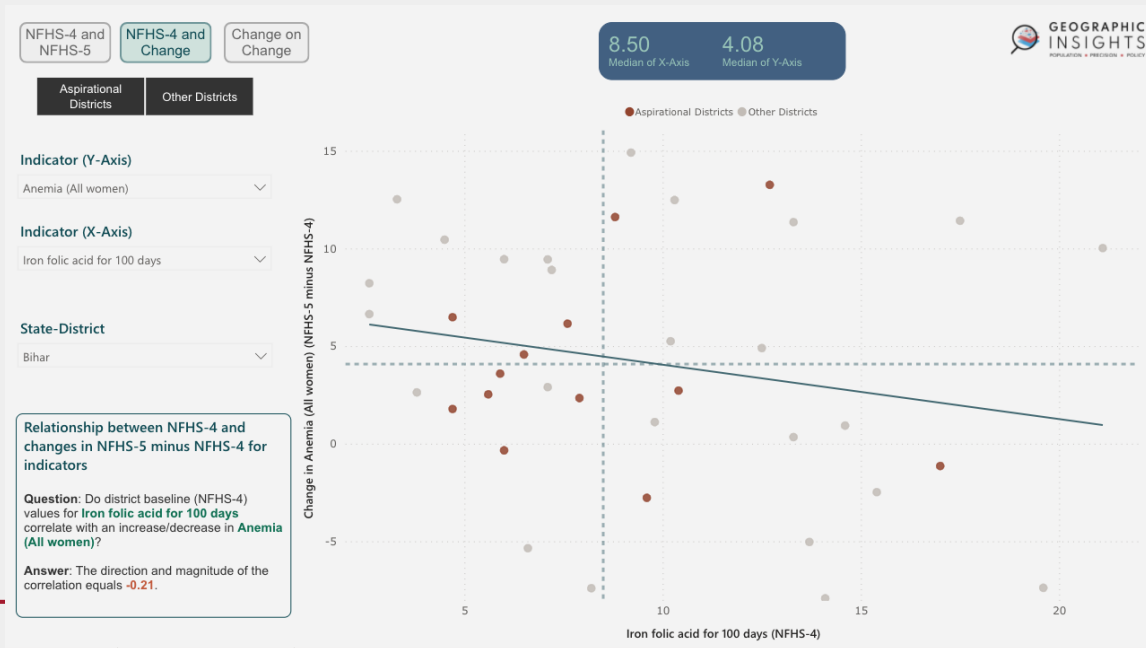
Bihar ^

Search

- Select all
- Andaman & Nicobar Islands
- Andhra Pradesh
- Arunachal Pradesh
- Assam
- Bihar
- Chhattisgarh
- Daman and Diu
- Goa

Select the state - Bihar ←

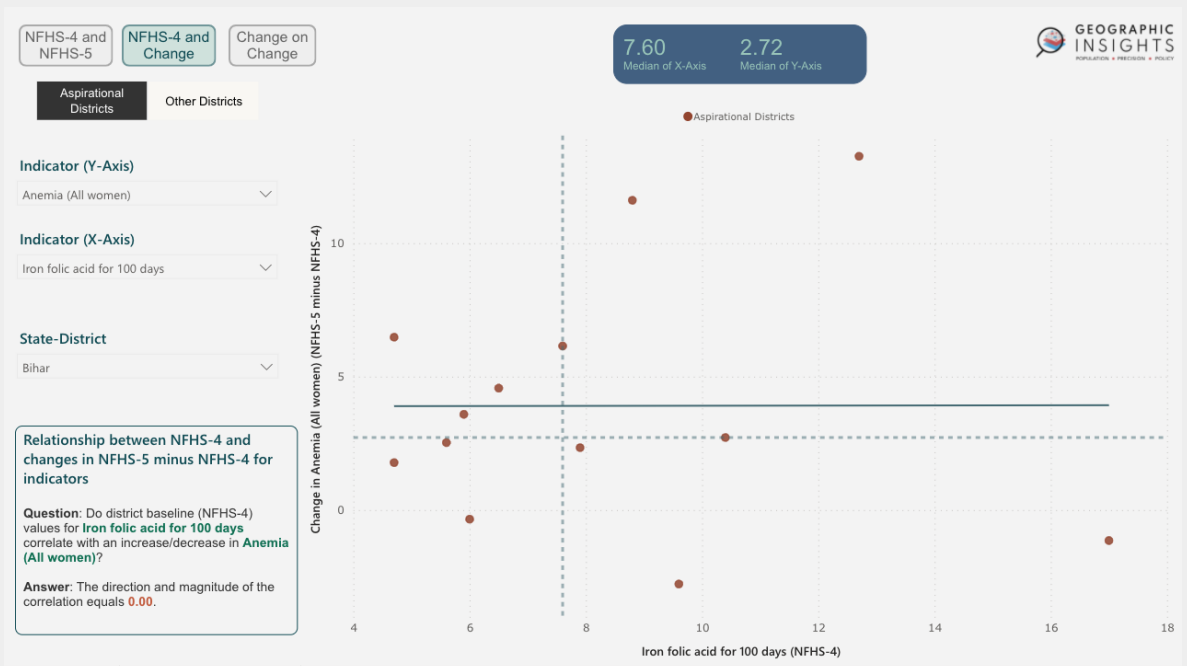
Note: Multiple selections are also possible in the **State-District** filter.

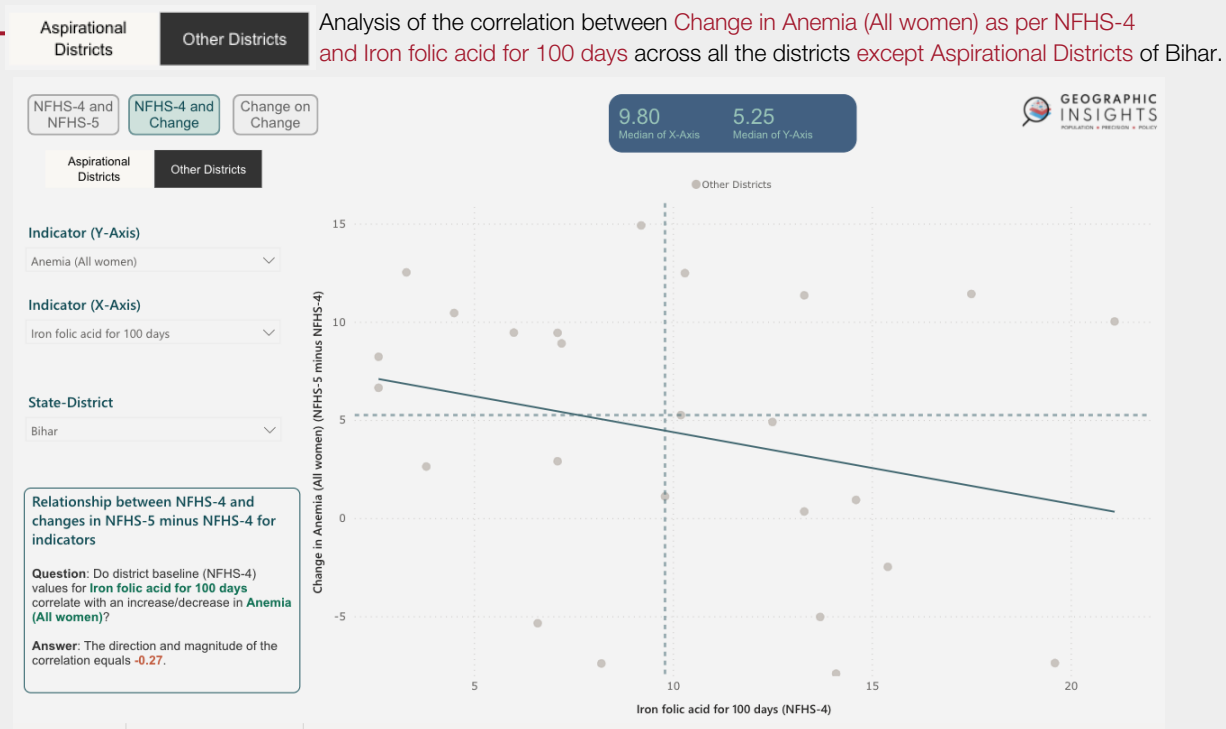


Analysis of the correlation between **Change in Anemia (All women)** as per NFHS-4 and **Iron folic acid for 100 days** across all the districts of Bihar.

Aspirational Districts **Other Districts**

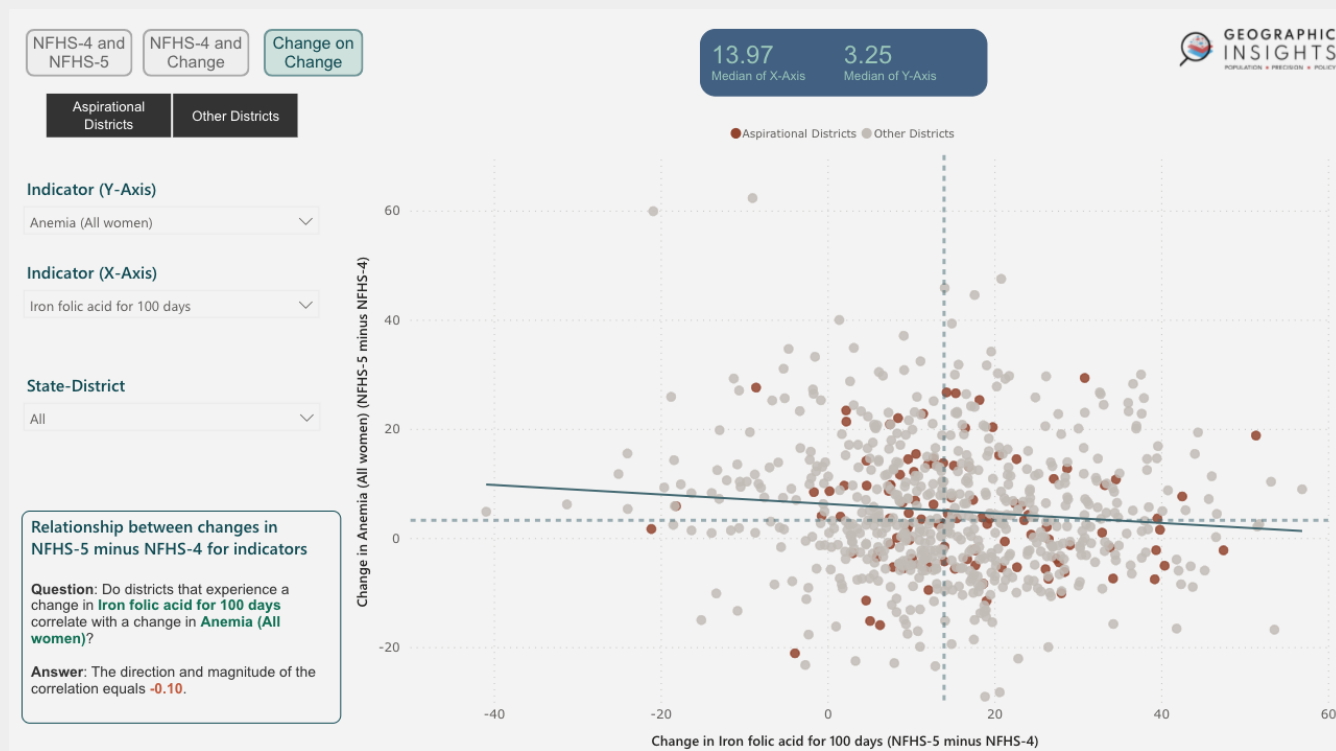
Analysis of the correlation between **Change in Anemia (All women)** as per NFHS-4 and **Iron folic acid for 100 days** across all the **Aspirational Districts** of Bihar.





• Analysis of Change on Change **NFHS-4 and Change**

This section of the Analysis page can be used to compare the impact of change in indicators simultaneously.



This is the landing page of **Analysis of Change on Change**.

→ For example: If the user wants to determine the correlation between the change in Adolescent Pregnancy and the change in Condom usage:

2 Select indicator on Y-Axis

Select an indicator from the **Indicator (Y-Axis)** filter.

Indicator (Y-Axis)

Anemia (All women) ▾ → Expand/Collapse all the fields

Indicator (Y-Axis)

Adolescent pregnancy ▲

Search

- 10 or more years of schooling (Women)
- 3 doses of penta or DPT vaccine
- 3 doses of penta or hepatitis B vaccine
- 3 doses of polio vaccine
- Adequate diet (All children - 6-23 months)
- Adequate diet (Breastfeeding - 6-23 mon...
- Adequate diet (Non-breastfeeding - 6-23...
- Adolescent pregnancy
- Anemia (All women)

Select the indicator for (Y-Axis) - Adolescent Pregnancy

Select indicator on X-Axis

Select another indicator from the **Indicator (X-Axis)** filter to visualize its correlation with the indicator selected for (Y-Axis).

Indicator (X-Axis)

Anemia (All women) ▾ → Expand/Collapse all the fields

Indicator (X-Axis)

Condom ▲

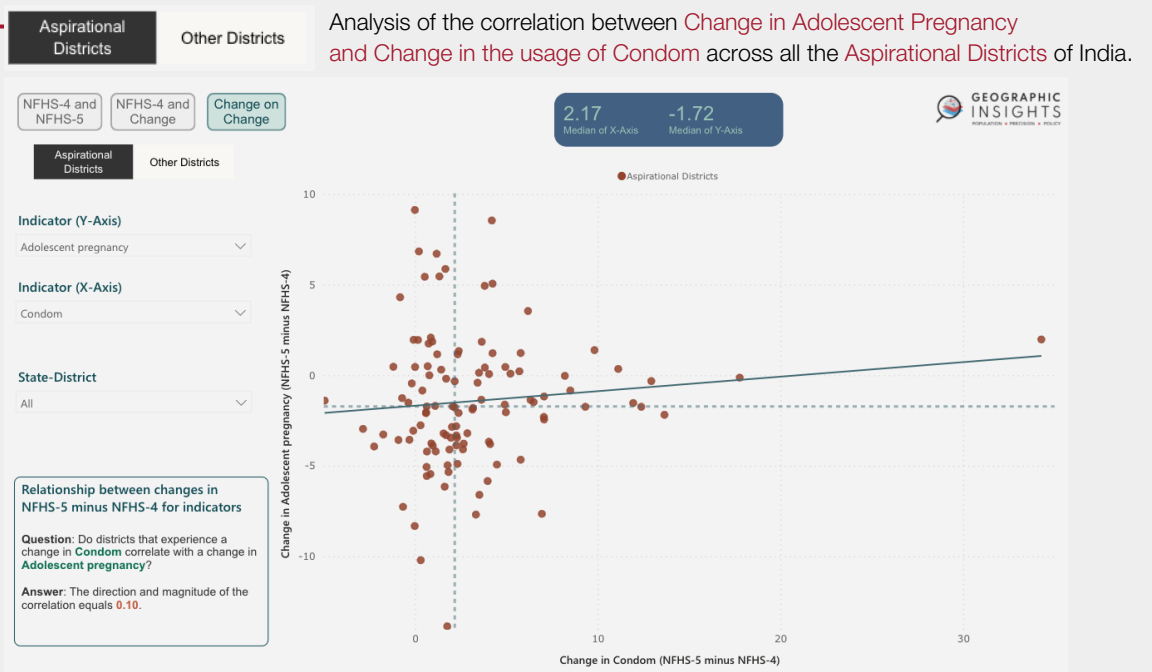
Search

- Children with diarrhoea taken to health...
- Children with diarrhoea who received ORS
- Children with diarrhoea who received zinc
- Children with fever or ARI taken to health...
- Clean fuel for cooking
- Condom
- Current users ever told about side effects
- Examination for breast cancer (Women)
- Examination for oral cancer (Women)
- Exclusive breastfeeding (within 6 months)

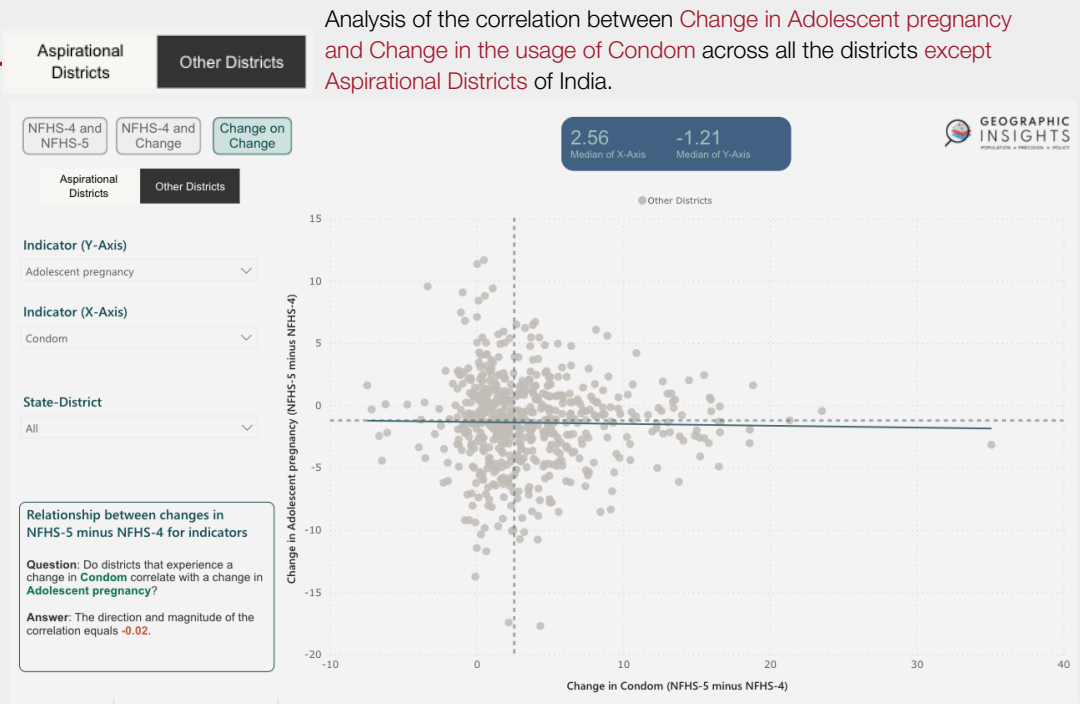
Select the indicator for (X-Axis) - Condom



Analysis of the correlation between **Change in Adolescent Pregnancy** and **Change in the usage of Condom** across all the districts of India.



Analysis of the correlation between **Change in Adolescent Pregnancy** and **Change in the usage of Condom** across all the **Aspirational Districts** of India.



→ **For example:** If the user wants to determine the correlation between the change in Adolescent Pregnancy and the change in Condom usage in Bihar:

3 Select State-District

The **select state-district filter** on the dashboard allows the users to select the state for which the results have to be visualized on **the NFHS-5 map view**.

State-District

All ▾ → Expand/Collapse all the fields

State-District

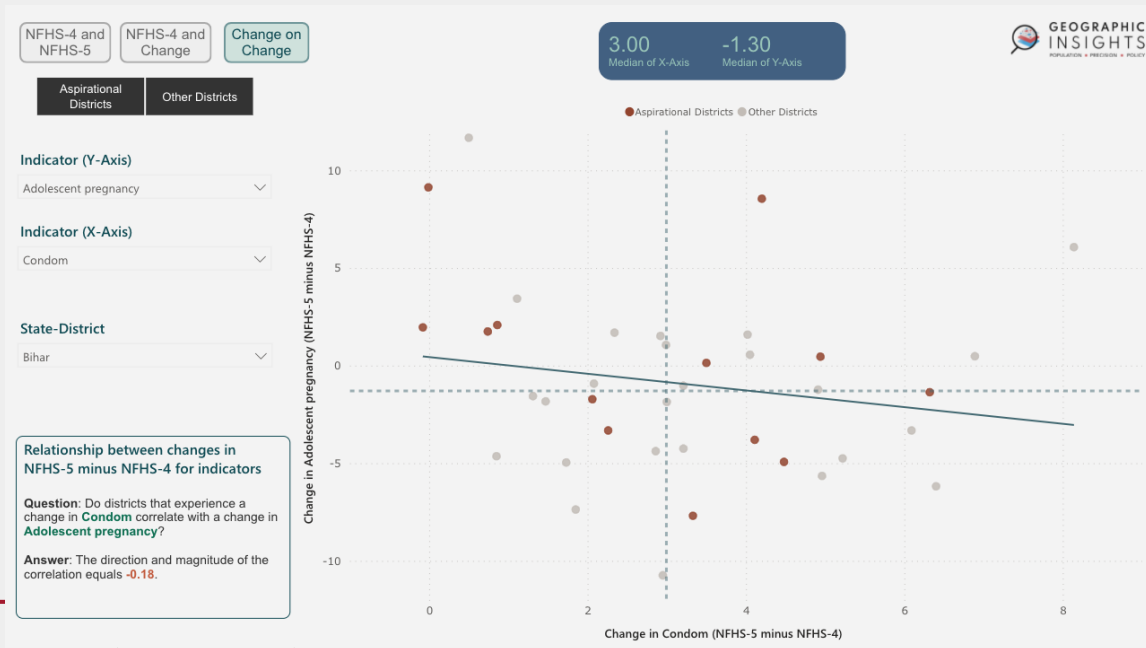
Bihar ▲

Search

- Select all
- Andaman & Nicobar Islands
- Andhra Pradesh
- Arunachal Pradesh
- Assam
- Bihar
- Chhattisgarh
- Daman and Diu
- Goa

Select the state - Bihar ←

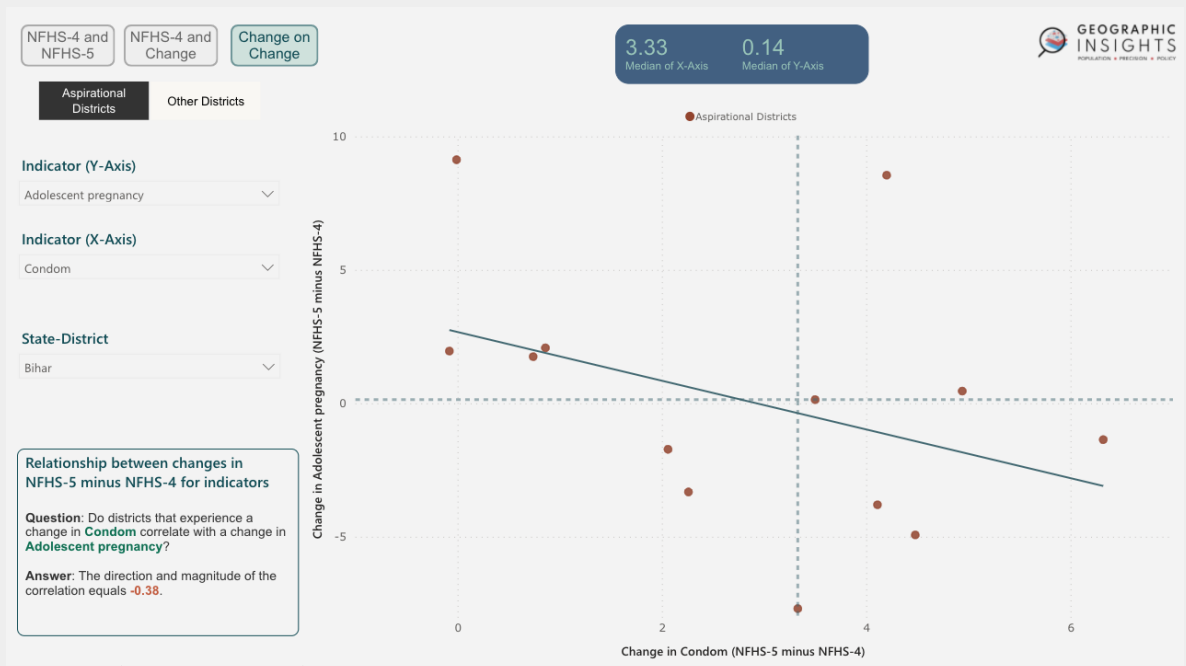
Note: Multiple selections are also possible in the **State-District** filter.



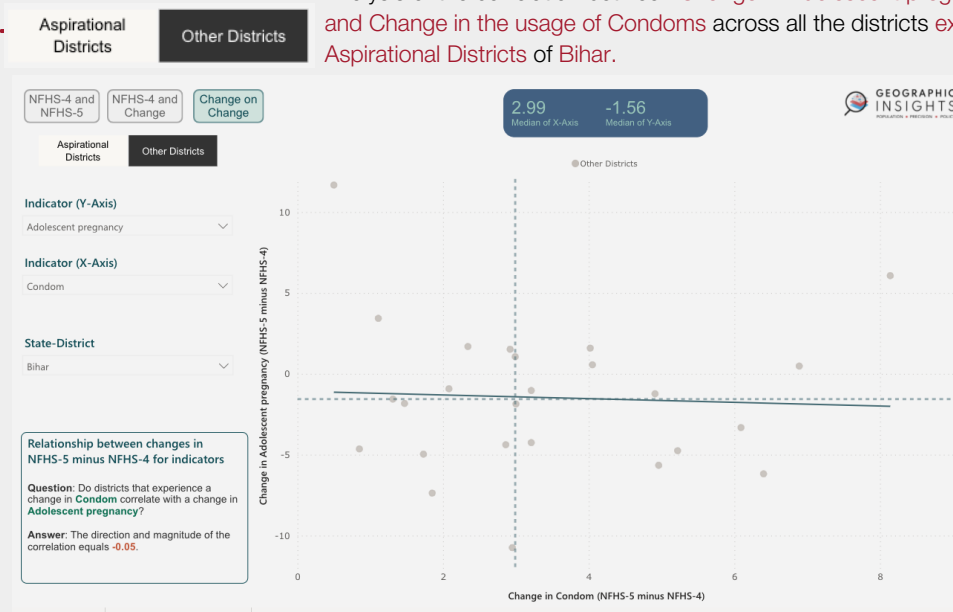
Analysis of the correlation between **Change in Adolescent pregnancy** and **Change in the usage of Condoms** across all the districts of Bihar.

Aspirational Districts **Other Districts**

Analysis of the correlation between **Change in Adolescent pregnancy** and **Change in the usage of Condoms** across all the **Aspirational Districts** of Bihar.



Analysis of the correlation between **Change in Adolescent pregnancy** and **Change in the usage of Condoms** across all the districts **except Aspirational Districts of Bihar**.



Technical Notes

Key terminology used in our Method

Key Term	Definition
Unchanged District	Districts that had the same geographic boundary in the NFHS-4 and NFHS-5 surveys.
New District	Districts that had ANY boundary alternation between the NFHS-4 and NFHS-5 surveys. These include a brand-new district forming, a district being changed by either removing or adding parts of it, or any other form of alteration.
Parent District	NFHS-4 districts that new NFHS-5 districts were formed from.
Brand New District	Districts that are not found in the NFHS-4 surveys and are a set of completely new geographic units in NFHS-5 formed by 1, 2, or 3 parent(s) districts.
Parent-Altered Districts	Defined as districts that existed in both the NFHS-4 and NFHS-5 surveys but in the NFHS-5 survey had parts of the district that were either removed or added.

Unchanged Districts	Calculation 1	Calculation 2
N=577	N=115	N=15

NFHS-4 values that our team assigned to each district. The full list of districts that used Calculation 1 and Calculation 2 can be found in Appendix A.

Methodology for Comparing NFHS-4 and NFHS-5 Districts

There were 707 districts that were surveyed in the NFHS-5 survey, compared to only 640 in the NFHS-4 survey. The NFHS-4 survey used Census 2011’s 640 districts, with the exception that 3 districts (Chandigarh, Lakshadweep, and Dadra and Nagar Haveli) did not have NFHS-4 district factsheet data. We developed a novel methodological approach to assign values from the 637 NFHS-4 districts to the 707 NFHS-5 districts. This approach keeps the saliency of the NFHS-5 data and does not make any alterations to the NFHS-5 data that is reported at the district level.

While there are other methods for distributing the parent district values to the new districts, such as using population weights, the data required for this are not available in a usable form. Therefore, for the comparison of the 130 altered districts, we note that this represents an approximation of what could have been possible.

Indicators in NFHS-5 and NFHS-4

NFHS-5 Category Name	NFHS-5 Indicator Name	NFHS-4 Indicator	Indicator Name in Dashboard	Direction
Population and Household Profile	Female population age 6 years and above who ever attended school (%)	Yes	Female school attendance	Positive
Population and Household Profile	Population below age 15 years (%)	Yes	Population below 15 years	Positive
Population and Household Profile	Sex ratio of the total population (females per 1,000 males)	Yes	Sex ratio	Positive
Population and Household Profile	Sex ratio at birth for children born in the last five years (females per 1,000 males)	Yes	Sex ratio at birth	Positive
Population and Household Profile	Children under age 5 years whose birth was registered with the civil authority (%)	Yes	Birth registration	Positive
Population and Household Profile	Deaths in the last 3 years registered with the civil authority (%)	No	Death registration	Positive
Population and Household Profile	Population living in households with electricity (%)	Yes	Population in household with electricity	Positive
Population and Household Profile	Population living in households with an improved drinking-water source (%)	Yes	Improved water	Positive
Population and Household Profile	Population living in households that use an improved sanitation facility (%)	Yes	Improved sanitation	Positive
Population and Household Profile	Households using clean fuel for cooking (%)	Yes	Clean fuel for cooking	Positive
Population and Household Profile	Households using iodized salt (%)	Yes	Iodized Salt	Positive
Population and Household Profile	Households with any usual member covered under a health insurance/financing scheme (%)	Yes	Health insurance coverage	Positive
Population and Household Profile	Children age 5 years who attended pre-primary school during the school year 2019-20 (%)	No	Child attendance of pre-primary school	Positive
Characteristics of Women	Women who are literate (%)	Yes	Literate women	Positive
Characteristics of Women	Women with 10 or more years of schooling (%)	Yes	10 or more years of schooling (Women)	Positive
Marriage and Fertility	Women age 20-24 years married before age 18 years (%)	Yes	Child marriage (Women)	Negative
Marriage and Fertility	Births in the 5 years preceding the survey that are third or higher order (%)	No	Third or higher order birth	Negative
Marriage and Fertility	Women age 15-19 years who were already mothers or pregnant at the time of the survey (%)	Yes	Adolescent pregnancy	Negative
Marriage and Fertility	Women age 15-24 years who use hygienic methods of protection during their menstrual period (%)	No	Menstrual hygiene	Positive
Current Use of Family Planning Methods	Any method (%)	Yes	Any contraceptive method	Positive

NFHS-5 Category Name	NFHS-5 Indicator Name	NFHS-4 Indicator	Indicator Name in Dashboard	Direction
Current Use of Family Planning Methods	Any modern method (%)	Yes	Any modern method	Positive
Current Use of Family Planning Methods	Female sterilization (%)	Yes	Female sterilization	Positive
Current Use of Family Planning Methods	Male sterilization (%)	Yes	Male sterilization	Positive
Current Use of Family Planning Methods	IUD/PPIUD (%)	Yes	IUD/PPIUD	Positive
Current Use of Family Planning Methods	Pill (%)	Yes	Pill	Positive
Current Use of Family Planning Methods	Condom (%)	Yes	Condom	Positive
Current Use of Family Planning Methods	Injectables (%)	No	Injectables	Positive
Unmet Need for Family Planning	Total unmet need (%)	Yes	Total unmet need	Negative
Unmet Need for Family Planning	Unmet need for spacing (%)	Yes	Unmet need for spacing	Negative
Quality of Family Planning Services	Health worker ever talked to female non-users about family planning (%)	Yes	Interaction of health worker	Positive
Quality of Family Planning Services	Current users ever told about side effects of current method (%)	Yes	Current users ever told about side effects	Positive
Maternal and Child Health	Mothers who had an antenatal check-up in the first trimester (%)	Yes	Antenatal check-up in the first trimester	Positive
Maternal and Child Health	Mothers who had at least 4 antenatal care visits (%)	Yes	At least 4 antenatal care visits	Positive
Maternal and Child Health	Mothers whose last birth was protected against neonatal tetanus (%)	Yes	Last birth protected against neonatal tetanus	Positive
Maternal and Child Health	Mothers who consumed iron folic acid for 100 days or more when they were pregnant (%)	Yes	Iron folic acid for 100 days	Positive
Maternal and Child Health	Mothers who consumed iron folic acid for 180 days or more when they were pregnant (%)	No	Iron folic acid for 180 days	Positive
Maternal and Child Health	Registered pregnancies for which the mother received a Mother and Child Protection (MCP) card (%)	Yes	Mother and Child Protection card received	Positive
Maternal and Child Health	Mothers who received postnatal care from a doctor/nurse/LHV/ANM/midwife/other health personnel within 2 days of delivery (%)	Yes	Mothers received postnatal care	Positive
Maternal and Child Health	Average out-of-pocket expenditure per delivery in a public health facility (Rs.)	Yes	OOP expenditure per delivery	Positive
Maternal and Child Health	Children born at home who were taken to a health facility for a check-up within 24 hours of birth (%)	No	Postnatal check after home delivery	Positive

NFHS-5 Category Name	NFHS-5 Indicator Name	NFHS-4 Indicator	Indicator Name in Dashboard	Direction
Maternal and Child Health	Children who received postnatal care from a doctor/nurse/LHV/ANM/midwife/other health personnel within 2 days of delivery (%)	Yes	Postnatal check by skilled health workers	Positive
Delivery Care	Institutional births (%)	Yes	Institutional births	Positive
Delivery Care	Institutional births in public facility (%)	Yes	In public facility	Positive
Delivery Care	Home births that were conducted by skilled health personnel (%)	Yes	Home delivery by skilled health personnel	Positive
Delivery Care	Births attended by skilled health personnel (%)	Yes	Births by skilled health personnel	Positive
Delivery Care	Births delivered by caesarean section (%)	Yes	Caesarean section delivery	Positive
Delivery Care	Births in a private health facility that were delivered by caesarean section (%)	Yes	Caesarean section in private sector	Positive
Delivery Care	Births in a public health facility that were delivered by caesarean section (%)	Yes	Caesarean section in public sector	Positive
Child Vaccinations and Vit A Supplements	Children age 12-23 months fully vaccinated based on information from either vaccination card or mother's recall (%)	Yes	Full vaccination	Positive
Child Vaccinations and Vit A Supplements	Children age 12-23 months fully vaccinated based on information from vaccination card only (%)	No	Full vaccination (Source from card only)	Positive
Child Vaccinations and Vit A Supplements	Children age 12-23 months who have received BCG (%)	Yes	BCG	Positive
Child Vaccinations and Vit A Supplements	Children age 12-23 months who have received 3 doses of polio vaccine (%)	Yes	3 doses of polio vaccine	Positive
Child Vaccinations and Vit A Supplements	Children age 12-23 months who have received 3 doses of penta or DPT vaccine (%)	Yes	3 doses of penta or DPT vaccine	Positive
Child Vaccinations and Vit A Supplements	Children age 12-23 months who have received the first dose of measles-containing vaccine (MCV) (%)	Yes	First dose of measles-containing vaccine	Positive
Child Vaccinations and Vit A Supplements	Children age 24-35 months who have received a second dose of measles-containing vaccine (MCV) (%)	No	Second dose of measles-containing vaccine	Positive
Child Vaccinations and Vit A Supplements	Children age 12-23 months who have received 3 doses of rotavirus vaccine (%)	No	3 doses of rotavirus vaccine	Positive
Child Vaccinations and Vit A Supplements	Children age 12-23 months who have received 3 doses of penta or hepatitis B vaccine (%)	Yes	3 doses of penta or hepatitis B vaccine	Positive
Child Vaccinations and Vit A Supplements	Children age 9-35 months who received a vitamin A dose in the last 6 months (%)	Yes	Vitamin A dose in the last 6 months	Positive
Child Vaccinations and Vit A Supplements	Children age 12-23 months who received most of their vaccinations in a public health facility (%)	Yes	Vaccinations in a public health facility	Positive

NFHS-5 Category Name	NFHS-5 Indicator Name	NFHS-4 Indicator	Indicator Name in Dashboard	Direction
Child Vaccinations and Vit A Supplements	Children age 12-23 months who received most of their vaccinations in a private health facility (%)	Yes	Vaccinations in a private health facility	Positive
Treatment of Childhood Diseases	Prevalence of diarrhoea in the 2 weeks preceding the survey (%)	Yes	Prevalence of diarrhoea	Negative
Treatment of Childhood Diseases	Children with diarrhoea in the 2 weeks preceding the survey who received oral rehydration salts (ORS) (%)	Yes	Children with diarrhoea who received ORS	Positive
Treatment of Childhood Diseases	Children with diarrhoea in the 2 weeks preceding the survey who received zinc (%)	Yes	Children with diarrhoea who received zinc	Positive
Treatment of Childhood Diseases	Children with diarrhoea in the 2 weeks preceding the survey taken to a health facility or health provider (%)	Yes	Children with diarrhoea taken to health facility	Positive
Treatment of Childhood Diseases	Prevalence of symptoms of acute respiratory infection (ARI) in the 2 weeks preceding the survey (%)	Yes	Prevalence of ARI	Negative
Treatment of Childhood Diseases	Children with fever or symptoms of ARI in the 2 weeks preceding the survey taken to a health facility or health provider (%)	Yes	Children with fever or ARI taken to health facility	Positive
Child Feeding and Nutritional Status	Children under age 3 years breastfed within one hour of birth (%)	Yes	Breastfed within one hour of birth	Positive
Child Feeding and Nutritional Status	Children under age 6 months exclusively breastfed (%)	Yes	Exclusive breastfeeding (within 6 months)	Positive
Child Feeding and Nutritional Status	Children age 6-8 months receiving solid or semi-solid food and breastmilk (%)	Yes	Receiving solid/semi-solid food (6-8 months)	Positive
Child Feeding and Nutritional Status	Breastfeeding children age 6-23 months receiving an adequate diet (%)	Yes	Adequate diet (Breastfeeding - 6-23 months)	Positive
Child Feeding and Nutritional Status	Non-breastfeeding children age 6-23 months receiving an adequate diet (%)	Yes	Adequate diet (Nonbreastfeeding - 6-23 months)	Positive
Child Feeding and Nutritional Status	Total children age 6-23 months receiving an adequate diet (%)	Yes	Adequate diet (All children - 6-23 months)	Positive
Child Feeding and Nutritional Status	Children under 5 years who are stunted (height-for-age) (%)	Yes	Stunting	Negative
Child Feeding and Nutritional Status	Children under 5 years who are wasted (weight-for-height) (%)	Yes	Wasting	Negative
Child Feeding and Nutritional Status	Children under 5 years who are severely wasted (weight-for-height) (%)	Yes	Severe wasting	Negative
Child Feeding and Nutritional Status	Children under 5 years who are underweight (weight-for-age) (%)	Yes	Underweight	Negative
Child Feeding and Nutritional Status	Children under 5 years who are overweight (weight-for-height) (%)	No	Overweight	Negative

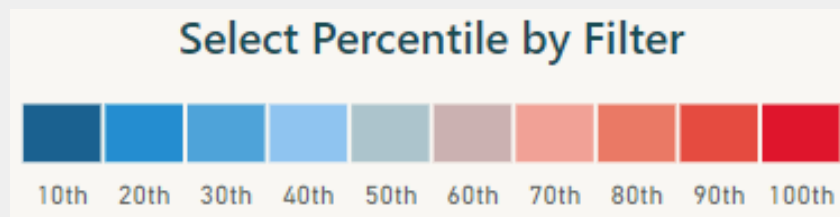
NFHS-5 Category Name	NFHS-5 Indicator Name	NFHS-4 Indicator	Indicator Name in Dashboard	Direction
Nutritional Status of Women	Women whose Body Mass Index (BMI) is below normal (BMI <18.5 kg/m ²) (%)	Yes	BMI below normal (Women)	Negative
Nutritional Status of Women	Women who are overweight or obese (BMI ≥25.0 kg/m ²) (%)	Yes	Overweight or obese (Women)	Negative
Nutritional Status of Women	Women who have high risk waist-to-hip ratio (≥0.85) (%)	No	Risky waist-to-hip ratio (Women)	Negative
Anaemia among Children and Women	Children age 6-59 months who are anaemic (<11.0 g/dl) (%)	Yes	Anemia (Children)	Negative
Anaemia among Children and Women	Non-pregnant women age 15-49 years who are anaemic (<12.0 g/dl) (%)	Yes	Anemia (Non-pregnant women)	Negative
Anaemia among Children and Women	Pregnant women age 15-49 years who are anaemic (<11.0 g/dl) (%)	Yes	Anemia (Pregnant women)	Negative
Anaemia among Children and Women	All women age 15-49 years who are anaemic (%)	Yes	Anemia (All women)	Negative
Anaemia among Children and Women	All women age 15-19 years who are anaemic (%)	No	Anemia (All adolescent women)	Negative
Blood Sugar Level among Adults	Blood sugar level - high (141-160 mg/dl) (%)	No	High (141-160 mg/dl) (Women)	Negative
Blood Sugar Level among Adults	Blood sugar level - very high (>160 mg/dl) (%)	Yes	Very high (>160 mg/dl) (Women)	Negative
Blood Sugar Level among Adults	Blood sugar level - high or very high (>140 mg/dl) or taking medicine to control blood sugar level (%)	Yes	High or very high or taking medicine (Women)	Negative
Blood Sugar Level among Adults	Blood sugar level - high (141-160 mg/dl) (%)	No	High (141-160 mg/dl) (Men)	Negative
Blood Sugar Level among Adults	Blood sugar level - very high (>160 mg/dl) (%)	Yes	Very high (>160 mg/dl) (Men)	Negative
Blood Sugar Level among Adults	Blood sugar level - high or very high (>140 mg/dl) or taking medicine to control blood sugar level (%)	Yes	High or very high or taking medicine (Men)	Negative
Hypertension among Adults	Mildly elevated blood pressure (Systolic 140-159 mm of Hg and/or Diastolic 90-99 mm of Hg) (%)	Yes	Mild blood pressure (Women)	Negative
Hypertension among Adults	Moderately or severely elevated blood pressure (Systolic ≥160mm of Hg and/or Diastolic ≥100mm of Hg) (%)	Yes	Moderate or severe blood pressure (Women)	Negative
Hypertension among Adults	Elevated blood pressure (Systolic ≥140 mm of Hg and/or Diastolic ≥90 mm of Hg) or taking medicine to control blood pressure (%)	Yes	Blood pressure (Women)	Negative
Hypertension among Adults	Mildly elevated blood pressure (Systolic 140-159 mm of Hg and/or Diastolic 90-99 mm of Hg) (%)	Yes	Mild blood pressure (Men)	Negative

NFHS-5 Category Name	NFHS-5 Indicator Name	NFHS-4 Indicator	Indicator Name in Dashboard	Direction
Hypertension among Adults	Moderately or severely elevated blood pressure (Systolic \geq 160mm of Hg and/or Diastolic \geq 100mm of Hg) (%)	Yes	Moderate or severe blood pressure (Men)	Negative
Hypertension among Adults	Elevated blood pressure (Systolic \geq 140 mm of Hg and/or Diastolic \geq 90 mm of Hg) or taking medicine to control blood pressure (%)	Yes	Blood pressure (Men)	Negative
Screening for Cancer among Women	Ever undergone a screening test for cervical cancer (%)	Yes	Screening for cervical cancer (Women)	Negative
Screening for Cancer among Women	Ever undergone a breast examination for breast cancer (%)	Yes	Examination for breast cancer (Women)	Negative
Screening for Cancer among Women	Ever undergone an oral cavity examination for oral cancer (%)	Yes	Examination for oral cancer (Women)	Negative
Tobacco and Alcohol Use among Adults	Women age 15 years and above who use any kind of tobacco (%)	No	Tobacco use (Women)	Negative
Tobacco and Alcohol Use among Adults	Men age 15 years and above who use any kind of tobacco (%)	No	Tobacco use (Men)	Negative
Tobacco and Alcohol Use among Adults	Women age 15 years and above who consume alcohol (%)	No	Alcohol consumption (Women)	Negative
Tobacco and Alcohol Use among Adults	Men age 15 years and above who consume alcohol (%)	No	Alcohol consumption (Men)	Negative

Note on Aspirational Districts

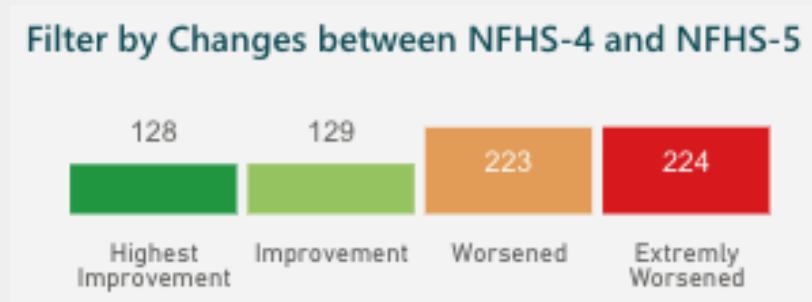
The 112 current aspirational districts from NITI Aayog were matched to the 707 districts surveyed in NFHS-5. There are only 111 aspirational districts identified on our dashboard because we were unable to discern the equivalent district to “Bhoopalapalli (Warangal)” in mapping the 112 aspirational district list to the 707-district list.

Interpreting the Color Legend for NFHS-5



The divergent color legend going from red to blue on the NFHS-5 page is divided up into 10 percentiles, with 100 being the worst (>90th percentile) and 1 being the best (<10th percentile). Additionally, the higher number of each percentile category is displayed on the dashboard. For example, the 30th percentile displays values falling between the 20th and 30th percentiles. Percentiles 10 to 50 are colored in shades of blue, and percentiles 60 to 100 are colored in shades of red.

Interpreting the Color Legend for Change between NFHS-4 and NFHS-5



Note: All the values were rounded for displaying on the dashboard to 1 decimal place. Thus, if a district experienced a -0.03% change, it shows 0% change but falls into the improvement category. However, districts having exactly 0% change are labelled as worsened.

For the change page, we divided it up into 2 groups first, based on whether the district experienced improvement or worsened. This was done by subtracting the NFHS-4 value from the NFHS-5 value. After that, using the "Direction" column from the table above, we knew whether a positive difference or a negative difference was better for each indicator. For example, if a district had 50% literate population in NFHS-4 and 60% literate population in NFHS-5, the difference was +10% (60-50). This would be labeled as a positive, contrary to if a district had 50% stunting in NFHS-4 and 60% stunting in NFHS5, the difference would be +10% (60-50), but this would be labeled as a negative.

Following this, we divided each group of districts (improved and worsened) for each indicator into 2 more additional sub-groups. This was done using the 50th percentile of the improved and worsened groups separately, to assign a district a group value of 1 to 4, with 1 being highest improvement, and 4 being extremely worsened. For about 0.8% of district-indicator pairings, there is 0 change between NFHS-4 and NFHS-5, and those districts are colored as “Improvement” or “Worsened” depending on the indicator direction. We also added the number of districts that fall into each category as shown in the image above for “Anemia (All women)”.

Calculation 1: One (1) NFHS-4 parent district becoming one (1) brand-new NFHS-5 district and one (1) parent-altered NFHS-5 district.

In this calculation, the NFHS-4 value for the brand-new and parent-altered districts is going to be the same as what the parent district had in the NFHS-4 district factsheet. This can be illustrated with the example below:

District	NFHS-4 Value	NFHS-5 Value
Thane	54.1	N/A
Palghar	54.1	70.3
*Thane	54.1	67.9

*Thane is the parent-altered version of Thane from NFHS-4 (its parent district) after Palghar was carved out from it. N/A = Not Applicable, only *Thane appears, not Thane, in NFHS-5.

Calculation 2: Two (2) NFHS-4 parent districts forming one (1) brand-new NFHS-5 districts and two (2) parent-altered NFHS-5 districts.

In this calculation, the NFHS-4 values for the parent-altered districts remain the same as their respective parent district. The NFHS-4 value for the brand-new district is the mean of the two or three parent district values.

District	NFHS-4 Value	NFHS-5 Value
Ahmadabad 768	76	N/A
Bhavnagar 926	69.2	N/A
Botad 1032	72.6	75.5
*Ahmadabad 1010	76	72
*Bhavnagar 950	69.2	71.5

*Ahmadabad and *Bhavnagar are the parent-altered version of their respective parent districts after forming Botad, a new district that was created from some parts of both districts. N/A = Not Applicable, only *Ahmadabad and *Bhavnagar appear in NFHS-5.

Appendix A

State Name	District Name	Example Calculation
Arunachal Pradesh	East Siang	Example 1
Arunachal Pradesh	Kra Daadi	Example 1
Arunachal Pradesh	Kurung Kumey	Example 1
Arunachal Pradesh	Lohit	Example 1
Arunachal Pradesh	Namsai	Example 1
Arunachal Pradesh	Langding	Example 1
Arunachal Pradesh	Tirap	Example 1
Arunachal Pradesh	West Siang	Example 1
Arunachal Pradesh	Siang	Example 2
Assam	Dhubri	Example 1
Assam	South Salmara-Mankachar	Example 1
Assam	Jorhat	Example 1
Assam	Majuli	Example 1
Assam	Karbi Anglong	Example 1
Assam	Karbi Anglong West	Example 1
Assam	Hojai	Example 1
Assam	Nagaon	Example 1
Assam	Charaideo	Example 1
Assam	Sivasagar	Example 1
Assam	Biswanath	Example 1
Assam	Sonitpur	Example 1
Chhattisgarh	Balrampur	Example 1
Chhattisgarh	Bastar	Example 1
Chhattisgarh	Dantewada	Example 1
Chhattisgarh	Kodagaon	Example 1
Chhattisgarh	Bilaspur	Example 1
Chhattisgarh	Mungeli	Example 1
Chhattisgarh	Sukma	Example 1
Chhattisgarh	Balod	Example 1
Chhattisgarh	Bemetara	Example 1
Chhattisgarh	Durg	Example 1
Chhattisgarh	Baloda Bazar	Example 1
Chhattisgarh	Gariaband	Example 1
Chhattisgarh	Raipur	Example 1

State Name	District Name	Example Calculation
Chhattisgarh	Surajpur	Example 1
Chhattisgarh	Surguja	Example 1
Gujarat	Ahmadabad	Example 1
Gujarat	Botad	Example 2
Gujarat	Bhavnagar	Example 1
Gujarat	Devbhoomi Dwarka	Example 1
Gujarat	Jamnagar	Example 1
Gujarat	Gir Somnath	Example 1
Gujarat	Junagadh	Example 1
Gujarat	Kheda	Example 1
Gujarat	Panch Mahals	Example 1
Gujarat	Mahisagar	Example 2
Gujarat	Rajkot	Example 1
Gujarat	Morbi	Example 2
Gujarat	Aravali	Example 1
Gujarat	Sabar Kantha	Example 1
Gujarat	Surendranagar	Example 1
Gujarat	Chhota Udaipur	Example 1
Gujarat	Vadodara	Example 1
Haryana	Bhiwani	Example 1
Haryana	Dadri	Example 1
Madhya Pradesh	Agar Malwa	Example 1
Madhya Pradesh	Shajapur	Example 1
Maharashtra	Palghar	Example 1
Maharashtra	Thane	Example 1
Meghalaya	North Garo Hills	Example 1
Meghalaya	East Garo Hills	Example 1
Meghalaya	East Jaintia Hills	Example 1
Meghalaya	West Jaintia Hills	Example 1
Meghalaya	West Garo Hills	Example 1
Meghalaya	South West Garo Hills	Example 1
Meghalaya	West Khasi Hills	Example 1
Meghalaya	South West Khasi Hills	Example 1
NCT of Delhi	Central	Example 2
NCT of Delhi	East	Example 1
NCT of Delhi	South East	Example 1

State Name	District Name	Example Calculation
NCT of Delhi	Shahdara	Example 2
NCT of Delhi	New Delhi	Example 2
NCT of Delhi	North	Example 2
NCT of Delhi	North East	Example 1
NCT of Delhi	North West	Example 1
NCT of Delhi	South	Example 1
NCT of Delhi	South West	Example 1
Punjab	Fazilka	Example 1
Punjab	Ferozpur	Example 1
Punjab	Pathankot	Example 1
Punjab	Gurdaspur	Example 1
Telangana	Adilabad	Example 1
Telangana	Kumuram Bheem (Asifabad)	Example 1
Telangana	Mancherial	Example 1
Telangana	Nirmal	Example 1
Telangana	Jagtial	Example 1
Telangana	Karimnagar	Example 1
Telangana	Peddapalle	Example 1
Telangana	Rajanna Sircilla	Example 1
Telangana	Bhadradi Kothagudem	Example 1
Telangana	Khammam	Example 1
Telangana	Jogulambha Gadwal	Example 1
Telangana	Mahbubnagar	Example 1
Telangana	Nagarkurnool	Example 1
Telangana	Wanaparthy	Example 1
Telangana	Medak	Example 1
Telangana	Sangareddy	Example 1
Telangana	Siddipet	Example 2
Telangana	Nalgonda	Example 1
Telangana	Suryapet	Example 1
Telangana	Yadadri Bhuvanagiri	Example 1
Telangana	Kamareddy	Example 1
Telangana	Nizamabad	Example 1
Telangana	Ranga Reddy	Example 1
Telangana	Medchal-Malkajgiri	Example 1
Telangana	Vikarabad	Example 2

State Name	District Name	Example Calculation
Telangana	Mahabubabad	Example 1
Telangana	Warangal Rural	Example 1
Telangana	Jayashankar Bhupalapally	Example 2
Telangana	Warangal Urban	Example 2
Telangana	Jangaon	Example 2
Tripura	North Tripura	Example 1
Tripura	Unakoti	Example 1
Tripura	Gomati	Example 1
Tripura	South Tripura	Example 1
Tripura	Khowai	Example 1
Tripura	Sepahijala	Example 1
Tripura	West Tripura	Example 1
Uttar Pradesh	Budaun	Example 1
Uttar Pradesh	Ghaziabad	Example 1
Uttar Pradesh	Hapur	Example 1
Uttar Pradesh	Moradabad	Example 1
Uttar Pradesh	Sambhal	Example 2
Uttar Pradesh	Muzaffarnagar	Example 1
Uttar Pradesh	Shamli	Example 1
Uttar Pradesh	Rae Bareli	Example 1
Uttar Pradesh	Sultanpur	Example 1
Uttar Pradesh	Amethi	Example 2
West Bengal	Paschim Barddhaman	Example 1
West Bengal	Purba Barddhaman	Example 1

Appendix B

Correlation Coefficient =

```

VAR __CORRELATION_TABLE = VALUES('ALL Scatter (X-Axis)'[NFHS-5 District, State])
VAR __COUNT =
COUNTX(
KEEPFILTERS(__CORRELATION_TABLE),
CALCULATE(
SUM('ALL Scatter (X-Axis)'[Final Change (5-4) Value])
* SUM('ALL Scatter (Y-Axis)'[Final Change (5-4) Value])
)
)
VAR __SUM_X =
SUMX(
KEEPFILTERS(__CORRELATION_TABLE),
CALCULATE(SUM('ALL Scatter (X-Axis)'[Final Change (5-4) Value]))
)
VAR __SUM_Y =
SUMX(
KEEPFILTERS(__CORRELATION_TABLE),
CALCULATE(SUM('ALL Scatter (Y-Axis)'[Final Change (5-4) Value]))
)
VAR __SUM_XY =
SUMX(
KEEPFILTERS(__CORRELATION_TABLE),
CALCULATE(
SUM('ALL Scatter (X-Axis)'[Final Change (5-4) Value])
* SUM('ALL Scatter (Y-Axis)'[Final Change (5-4) Value]) * 1.
)
)
VAR __SUM_X2 =
SUMX(
KEEPFILTERS(__CORRELATION_TABLE),
CALCULATE(SUM('ALL Scatter (X-Axis)'[Final Change (5-4) Value]) ^ 2)
)
VAR __SUM_Y2 =
SUMX(
KEEPFILTERS(__CORRELATION_TABLE),
CALCULATE(SUM('ALL Scatter (Y-Axis)'[Final Change (5-4) Value]) ^ 2)
)
RETURN
DIVIDE(
__COUNT * __SUM_XY - __SUM_X * __SUM_Y * 1.,
SQRT(
(__COUNT * __SUM_X2 - __SUM_X ^ 2)
* (__COUNT * __SUM_Y2 - __SUM_Y ^ 2)
))

```